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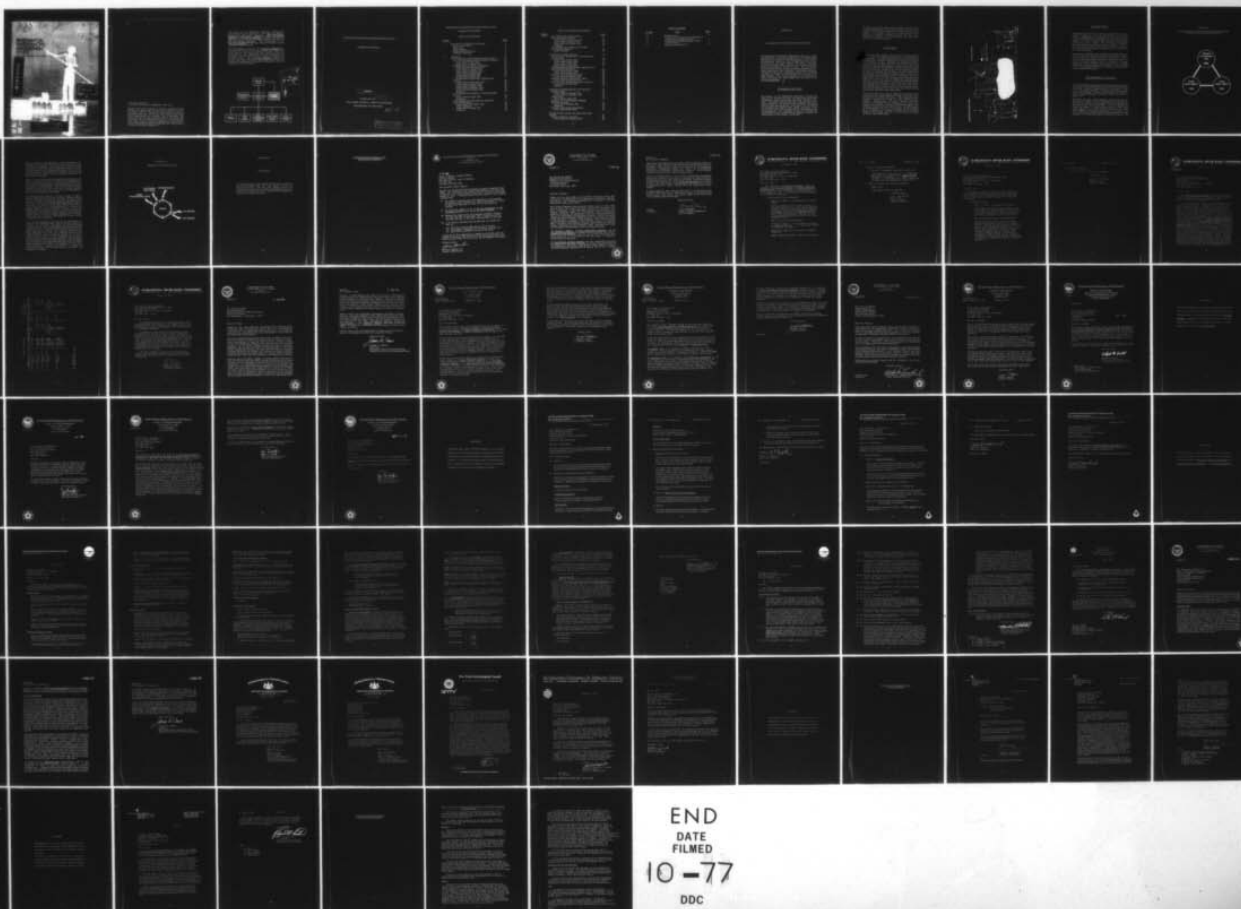
CORPS OF ENGINEERS BALTIMORE MD BALTIMORE DISTRICT
BINGHAMTON WASTEWATER MANAGEMENT STUDY. COMMENTS APPENDIX. (U)
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BINGHAMTON WASTEWATER MANAGEMENT STUDY

Comments Appendix • June 1976

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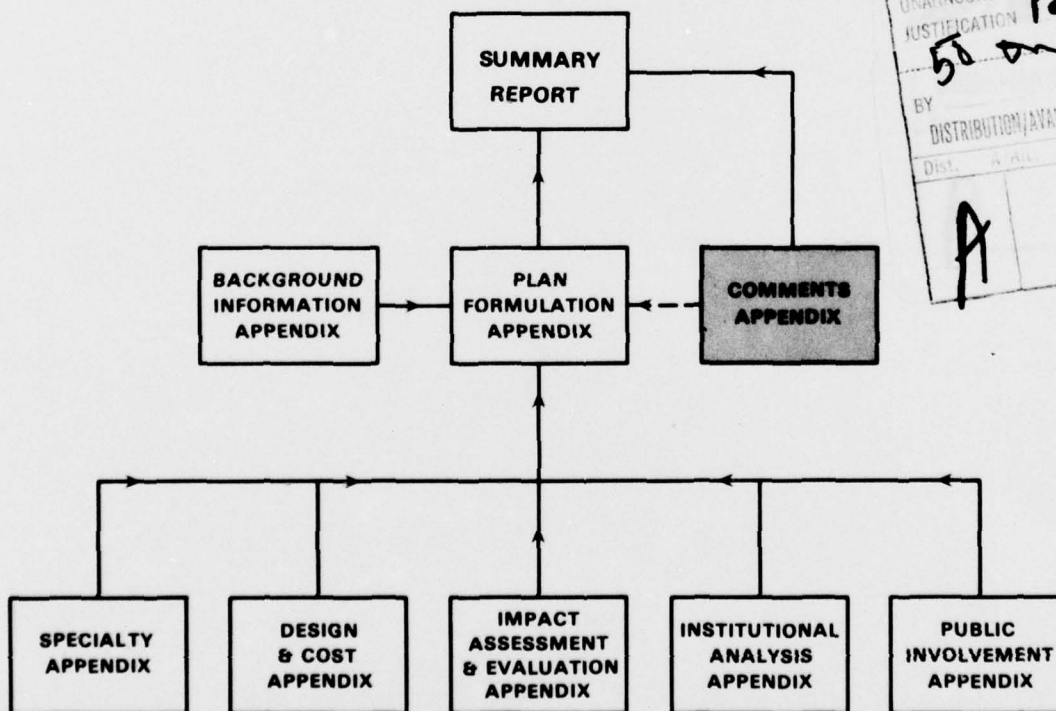
"The Raft of Summer"

Courtesy of Paul Smith, Binghamton, New York

Someone once said a picture is worth a thousand words, and the cover photograph summarizes the study in a simple but graphic manner. Today, the modern Huck Finn can enjoy many scenic and recreational opportunities associated with a Susquehanna River relatively free of pollutants. But tomorrow when the boy is grown, will the river still offer clean water for his children's enjoyment? This study suggests some ways to keep the Susquehanna clean and to ensure that future generations in Broome and Tioga Counties can enjoy "The Raft of Summer."

The Report for the Binghamton Wastewater Management Study consists of nine appendices. The Summary Report, Background Information Appendix, Plan Formulation Appendix, and Comments Appendix constitute the primary Study documents. The five remaining appendices support the Plan Formulation Appendix. The relationship of the Comments Appendix to the other Study documents is indicated in the diagram below.

The draft Report, except for the Comments Appendix, was circulated for review in the fall of 1975. As review comments were received from interested Federal, State, and local agencies and individuals, the draft document was modified to reflect relevant concerns prior to publication of the final version. The Comments Appendix contains the written reactions of others to the general procedure and findings of the Binghamton Wastewater Management Study as presented in the draft Report.



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BINGHAMTON WASTEWATER MANAGEMENT STUDY.

COMMENTS APPENDIX.

11

JUNE 1976

12

90 p.

Prepared by the

BALTIMORE DISTRICT, CORPS OF ENGINEERS

DEPARTMENT OF THE ARMY

409 111

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Distribution Unlimited

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BINGHAMTON WASTEWATER MANAGEMENT STUDY

COMMENTS APPENDIX

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CHAPTER I

OVERVIEW OF THE STUDY AND THE REPORT

→ The Binghamton Wastewater Management Study was a joint Federal, State, and local planning effort to develop viable alternatives for protection and enhancement of water quality and associated resources of the Susquehanna River Basin within Broome and Tioga Counties, New York. Following two years of concentrated activity, the draft Report for the Study was published in the fall of 1975. The draft Report documented the details of plan formulation, design and cost, impact assessment and evaluation, institutional analysis, and public involvement. Interested agencies and individuals were asked to review the draft Report and comment on the Study findings. These written responses and evaluations by others concerning the draft Report form the basis of the Comments Appendix.

PURPOSE OF THE STUDY

↑

The purpose of the Binghamton Wastewater Management Study was to develop both short and long-range wastewater management plans for Broome and Tioga Counties, New York. The Study identified both present and potential water quality problems, and designed and evaluated alternative plans to solve these problems. These plans were formulated to complement the existing water quality programs of the State of New York while assisting local communities along the Susquehanna and Chenango Rivers in achieving the requirements of the Federal Water Pollution Control Act Amendments of 1972 (Public Law 92-500).

The Study focused primarily on water quality and wastewater management problems. It did not concentrate on other water resource needs and problems such as flood control, water supply, or recreation. However, the Study did formulate alternative wastewater management plans that were compatible with solutions to these problems and would make them more readily attainable.

STUDY AREA

Broome and Tioga Counties, New York are located along the southern tier of counties bordering the Commonwealth of Pennsylvania. The Susquehanna River flows in the southern portion of both counties, and drains all of Tioga County and most of Broome County. Initially, the Binghamton Wastewater Management Study examined all of Broome and Tioga Counties in assessing wastewater management questions and related problems. The Bicounty Area is shown on Figure I-1. As wastewater problems were identified and potential solutions formulated, the Bicounty Area was divided into two regions for subsequent planning efforts. The major thrust of the Study focused on the "Urban Study Area" or central urban core in the two counties. Included in the Urban Study Area were the City of Binghamton, Johnson City, Endicott, Vestal, the Village of Owego, the Town of Owego, and expanding developments in the Nanticoke Creek Valley, the Chenango River Valley, and the Five Mile Point area. The Study geared its intensive effort to producing wastewater management plans for the Urban Study Area as the critical water quality problems were found there.

The second region was labeled "Outlying Communities" and encompassed the small residential villages and hamlets separated from the Urban Study Area. These Outlying Communities included the Village of Lisle, Whitney Point, Windsor, Harpursville, Waverly, Nichols, Spencer, Candor, and Newark Valley. Although there were some localized problems with sewage treatment and disposal, the Outlying Communities were found to have very little impact on water quality in the major waterways of the Bicounty Area. Therefore, the intensity of Study effort for these Outlying Communities was not to the same level of detail as for the Urban Study Area.

BICOUNTY STUDY AREA

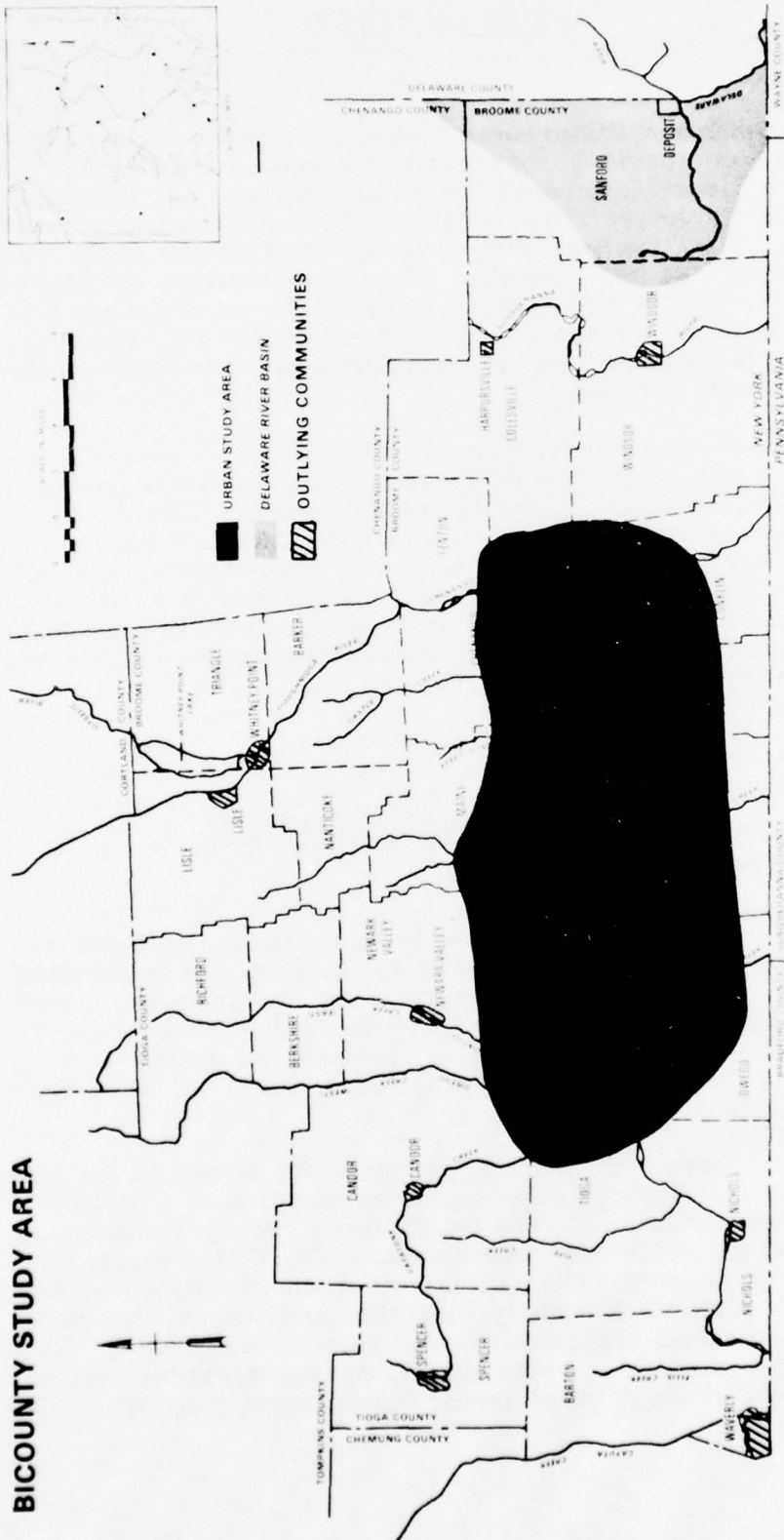


FIGURE I-1

SCOPE OF STUDY

The Binghamton Wastewater Management Study made a systematic comparison of major alternatives in terms of technical feasibility; environmental, social, and economic impacts; implementation arrangements; and public acceptability. The level of design detail used in the Study was of "survey scope" detail. The investigation developed sufficient design and evaluation detail to allow a choice to be made from a range of alternatives; it did not, however, provide the detailed design data necessary for construction of a specific project.

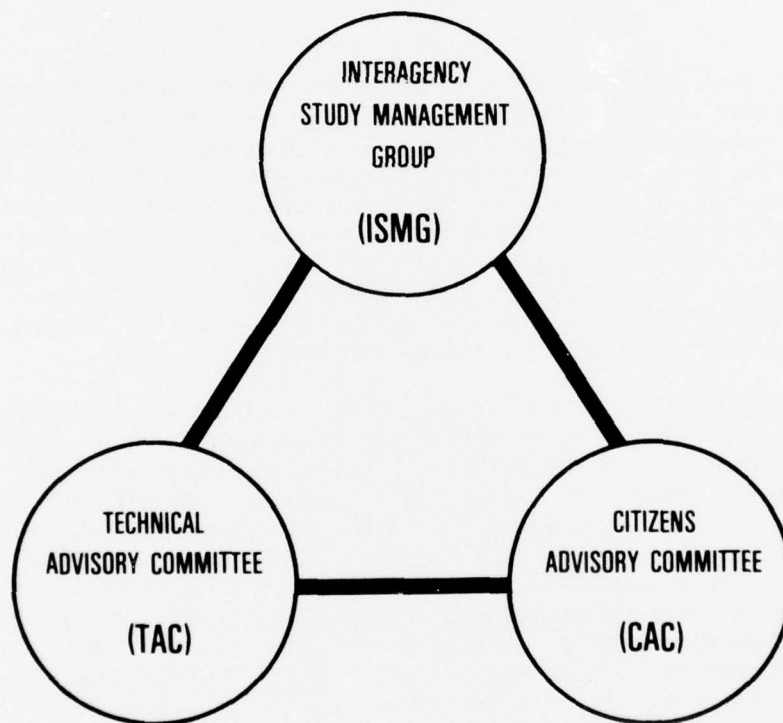
The survey scope Study, then, formulated and analyzed cost-effective and environmentally-effective wastewater management alternatives. These alternatives ranged from a plan to meet current requirements within the immediate future to a plan to achieve the highest levels of wastewater treatment by the year 1985, consistent with the goals of P. L. 92-500. Additionally, the alternatives were designed to the year 2020 with an accompanying schedule of construction priorities and implementation procedures.

ORGANIZATIONAL STRUCTURE

To encourage participation by other government agencies and the public, a formal organizational structure was established to furnish maximum opportunity for involvement. This formal structure consisted of an Interagency Study Management Group (ISMG), a Citizens Advisory Committee (CAC), and a Technical Advisory Committee (TAC) as shown on Figure I-2.

The ISMG provided overall guidance and direction for the Study effort. Policy decisions, interpretation of guidelines, and recommendations were sought from each participant on the ISMG as the Study progressed. The CAC supplied the necessary channel of communication where citizens could make suggestions for Study direction and where they could obtain additional information pertinent to the Study. The Committee also shared sponsorship and management responsibilities for the general public involvement program. On

FIGURE I-2
MANAGEMENT STRUCTURE FOR THE BINGHAMTON
WASTEWATER MANAGEMENT STUDY



the technical level, the counterpart of the Citizens Advisory Committee was the TAC. The purpose of the TAC was to review wastewater management alternatives in terms of technical adequacy and make recommendations for engineering aspects in each stage of the Study. The TAC also functioned as the basic mechanism for information exchange among participating organizations.

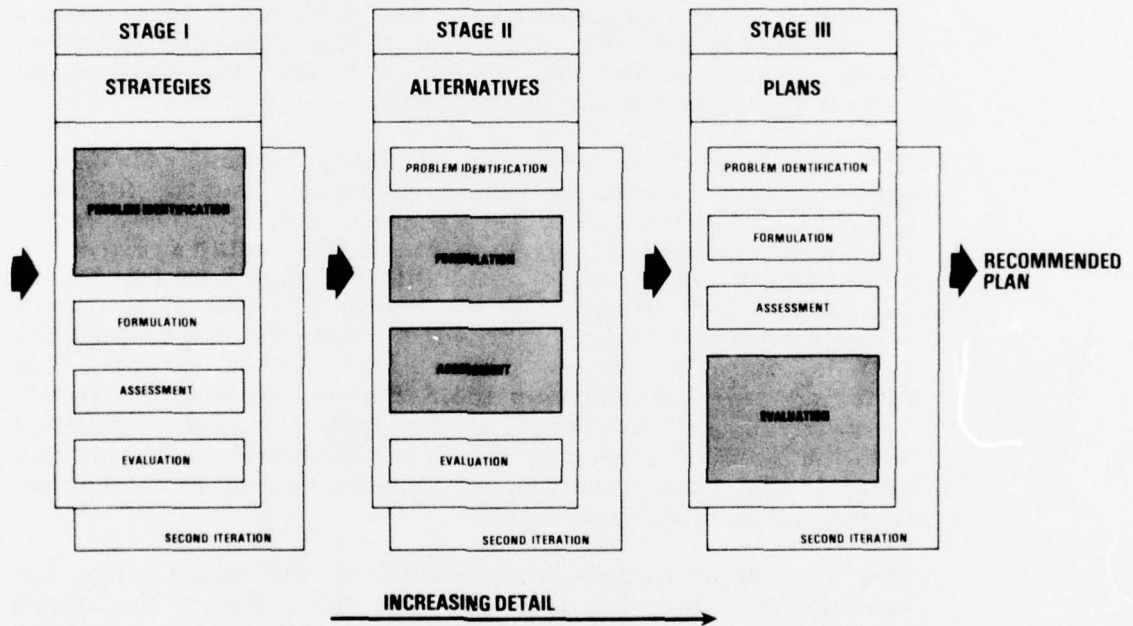
PLANNING FRAMEWORK

To accomplish the Binghamton Wastewater Management Study, a three stage planning approach was adopted. These three stages of plan development provided for increasing the level of detail of data and analysis while setting forth a fewer number of alternative plans for choice at the completion of each stage. For convenience and clarity, initial Stage I outputs were labeled as strategies, Stage II outputs as alternatives, and detailed Stage III outputs as complete plans. Figure I-3 conceptually displays the three stages, their labels, and the direction of progress.

Additionally, four tasks were accomplished within each stage. These four tasks included problem identification, formulation of solutions, impact assessment, and evaluation. Stage I emphasized problem identification; Stage II stressed formulation and assessment; and Stage III accented evaluation. Several modified repetitions of the complete set of tasks were required in each stage and were designated as iterations. Figure I-3 displays graphically the interrelationship of the 3 stages, the 4 tasks, and the numerous iterations. (The Plan Formulation Appendix gives a detailed account of the planning and decision-making process). The objective of this iterative planning process was to arrive at a mutually acceptable plan for recommendation to the general public at the completion of the Study.

Continuous review of Study progress was solicited by the Corps of Engineers throughout its effort. Affected parties were asked to participate in the actual plan formulation process so that realistic plans could be developed for Broome and Tioga Counties.

FIGURE I-3
RELATIONSHIP OF PLANNING STAGES, TASKS,
AND ITERATIONS



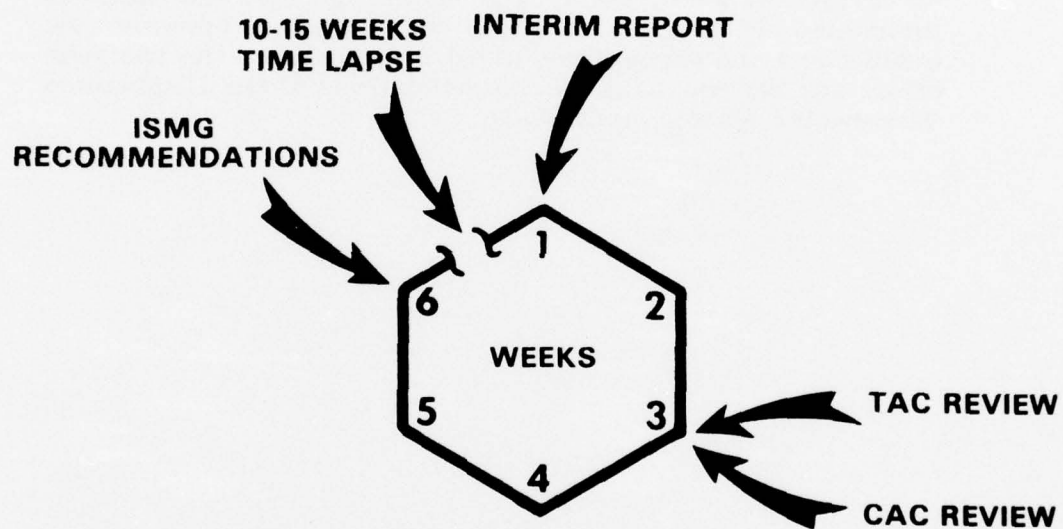
Interim reports, usually prepared by the consultant, were furnished to participants for their review at the end of each iteration in the Study. These reports generally described technical, environmental, or institutional aspects of work accomplished in the preceding report period. A total of six iteration reports were prepared, varying in length from 30 pages early in the Study to several hundred pages near the completion of the Study.

After a two or three week review period, the Technical and Citizens Advisory Committees would meet independently to discuss each interim report. Corps personnel and members of consultant's staff attended most meetings to answer questions and accept suggestions. The TAC and CAC meetings usually concluded with each committee arriving independently at a consensus agreement as to its own thoughts for formal recommendation to the ISMG.

The next step in the sequence of Study review, an Inter-agency Study Management Group meeting, usually followed the TAC and CAC meetings by about two or three more weeks. A spokesman for each committee would present his committee's concerns, questions and suggestions for direction in the next iteration of the Study. The two committee's recommendations were not always identical. It was then the ISMG's duty to review the interim report, resolve the differing recommendations from the technical and citizens' committees, and interpret agency policies and guidelines with the goal of selecting the best alternatives for further study in the next iteration. This sequence of study review is diagrammed in Figure I-4.

The continuous review process offered the opportunity for agencies and individuals other than the Corps of Engineers to share in the plan formulation and decision-making responsibilities. The "open planning" atmosphere generated during the review of each of the six interim reports encouraged constructive criticism and comment throughout the Study. Decisions were made on a sequential basis as many initial strategies were successively narrowed to a recommended Plan of Choice at the completion of the Study. Because of this extensive review procedure, other agencies and individuals were thoroughly involved with the Binghamton Wastewater Management Study when the draft Report documenting the entire effort was published in the fall of 1975. Therefore, comments presented in Chapter II generally reflect satisfaction with both the procedure and findings of the Study.

FIGURE I-4
SEQUENCE OF STUDY REVIEW



CHAPTER II

COMMENTS

The following chapter presents the written review comments of various Federal, State, and local agencies as well as interested citizens. As such, this chapter contains the evaluations and perceptives of others regarding the two year effort and the resulting recommendations of the Binghamton Wastewater Management Study.

COMMENTS FROM FEDERAL AND
INTERSTATE AGENCIES



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

REGION II

26 FEDERAL PLAZA

NEW YORK, NEW YORK 10007

2 JUL 1976

Robert S. McGarry, Brigadier General
District Engineer
Baltimore District, Corps of Engineers
P.O. Box 1715
Baltimore, Maryland 21203

Dear Brigadier General McGarry:

My staff has reviewed the Draft Binghamton Wastewater Management Study (BWMS). This draft meets the intent of the conditions associated with my approval of the plan of study as specified in my letter to you dated January 21, 1974. I therefore accept the draft subject to the following considerations:

- (1) The comments of the New York State Department of Environmental Conservation (DEC) as defined in a letter from Michael J. O'Toole to James Crews dated May 24, 1976, will be satisfactorily resolved.
- (2) The additional comments of DEC on the Plan Formulation and Cost and Design Appendices will be satisfactorily resolved.
- (3) Wherever the report states that advanced wastewater treatment will meet the 1985 "no discharge" goal, it should be clearly indicated that this is the Corp's interpretation of this goal.
- (4) It is clearly understood that the BWMS does not replace the need for:
 - (a) Facilities Planning under Section 201 of the Act,
 - (b) Environmental Assessments for individual projects, and
 - (c) Water Quality Standards revisions by the State.

I thank you for this opportunity to comment on this Draft, and I am pleased to inform you that the Draft is now being used by EPA in its review of Basin Plans, Facilities Plans and Environmental Assessments.

Sincerely yours,

Gerald M. Hansler, P.E.
Regional Administrator



DEPARTMENT OF THE ARMY
BALTIMORE DISTRICT, CORPS OF ENGINEERS
P.O. BOX 1715
BALTIMORE, MARYLAND 21203

NABPL-U

12 AUG 1976

Mr. Gerald M. Hansler
Regional Administrator
Region II, U.S. Environmental
Protection Agency
26 Federal Plaza
New York, New York 10007

Dear Mr. Hansler:

Thank you for your letter of 2 July 1976 concerning EPA's staff review of the draft Report for the Binghamton Wastewater Management Study. The following paragraphs are in response to the considerations noted in your letter.

The Corps of Engineers has received letters dated 24 May 1976, 29 June 1976, and 7 July 1976 (copies inclosed) from the New York State Department of Environmental Conservation (NYSDEC) containing comments about the draft Report. Where appropriate, editorial comments and suggestions have been incorporated into the text as the final Report was prepared. However, several substantive comments required further clarification and were answered by letter to Mr. Michael J. O'Toole (copy inclosed). This letter addressed certain questions pertaining to the following topics: the Baseline Plan, the impact of low dissolved oxygen concentrations on fisheries, stream classifications, the bacterial model, the prediction of dissolved oxygen concentrations, and the recommended plan.

The Summary Report, the Plan Formulation Appendix, and the Design and Cost Appendix have been revised to indicate that achievement of the "no discharge" goal of P.L. 92-500 by advanced wastewater treatment is in accordance with the Corps of Engineers' interpretation of this goal.

The Institutional Analysis Appendix and other applicable sections of the Report have also been rewritten to remove the implication that the Binghamton Wastewater Management Study fulfills all Step 1 Facilities Planning requirements of Section 201 of P.L. 92-500.



12 AUG 1976

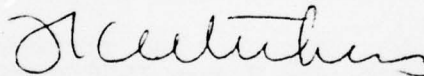
NABPL-U
Mr. Gerald M. Hansler

Tables have been included in the final Report indicating which requirements (for both Section 201 and Section 208) have been achieved and which requirements remain unaccomplished by the Binghamton Wastewater Management Study. Of course, the environmental assessment for individual projects and revisions of water quality standards will be local and state responsibilities.

I trust the inclosed letter to Mr. O'Toole and the above paragraphs answer your questions and concerns regarding the draft Report for the Binghamton Wastewater Management Study. Your letter and this response will become part of the Comments Appendix to be included as part of the final Report. Distribution of the final Report will be accomplished with a single mailing after all volumes have been printed.

It is encouraging to know that the draft Report is already being used by EPA in its water quality management programs for Broome and Tioga Counties, New York. Once again, thank you for your review and comments on the draft Report.

Sincerely yours,



G. K. WITHERS
Colonel, Corps of Engineers
District Engineer

4 Incls
As stated



SUSQUEHANNA RIVER BASIN COMMISSION

5012 Lenker Street • Mechanicsburg, Pennsylvania 17055

December 9, 1975

Mr. James E. Crews, Chairman
ISMG, Binghamton Wastewater Mgt. Study
Department of the Army
Baltimore District, Corps of Engineers
P.O. Box 1715
Baltimore, Maryland 21203

Dear Mr. Crews:

Four appendices, Background Information, Public Involvement, Institutional Analysis, and Impact Assessment and Evaluation, of the Binghamton Wastewater Management Study draft report were reviewed by the Susquehanna River Basin Commission staff. The following editorial comments are forwarded as requested.

a. Institutional Analysis Appendix

- Table II-1, page 22, "Susquehanna River Basin Compact".

The last sentence in the column entitled, "is concerned with" reads as, "The central purpose, however, has been in reviewing and coordination of Federal, State and local pollution control and management efforts." Change sentence to read, "The central purpose, however, has been in reviewing and coordinating Federal and State management efforts."

- Page 22, second line from bottom.

It reads in part, "... are provided to maintain a 50 mg/l minimum D.O." The 50 mg/l should be changed to 5.0 mg/l.

- Table III-2, page 81, last column, "Stormwater Treatment".

Change "denitrification" to read "chlorination".

Mr. J. E. Crews

- 2 -

December 9, 1975

b. Public Involvement Appendix

-- Page 20, "Susquehanna River Basin Commission".

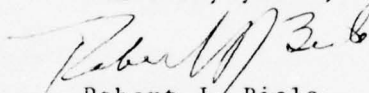
Second sentence reads in part, "... Susquehanna River Basin is responsible for regulation and management of water and" Change sentence to read, "... Susquehanna River Basin Commission is responsible for management of water and"

c. Impact Assessment and Evaluation Appendix

-- Pages 35-38.

These pages are out of sequence.

Sincerely yours,



Robert J. Bielo
Executive Director



SUSQUEHANNA RIVER BASIN COMMISSION

5012 Lenker Street • Mechanicsburg, Pennsylvania 17055

January 5, 1976

Mr. James E. Crews, Chairman
ISMG, Binghamton Wastewater Management Study
Department of the Army
Baltimore District, Corps of Engineers
P.O. Box 1715
Baltimore, Maryland 21205

Dear Mr. Crews:

The Summary Document and the Specialty Appendix of the Binghamton Wastewater Management Study draft report were reviewed by the Susquehanna River Basin Commission staff. The following editorial comments are forwarded as requested.

a. Summary Document -

-- Page 71, Table X-3, "Resource Commitments" -

Total land requirements shown for Plan 4, Biological AWT, is not consistent with the Table X-2, Terrestrial Ecology Impacts, and the text on Resource Commitments. Change land requirement for Plan 4 from 1,782 to 2,781 acres.

-- Page 86, third paragraph, "Recommendations" -

Microscreening of storm overflow at Owego Village was included as part of the recommendations. However, microscreening of storm overflow at Owego Village was not discussed in Chapter VI, Stormwater Management, and in Chapter IX, Plans for Choice. Also, the Impact Assessment Appendix did not include microscreening at Owego Village. Because microscreening at Owego Village was not included in the detailed evaluation of the Plans for Choice, it should not be included as part of the recommendations.

Mr. J. E. Crews

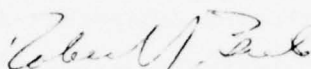
- 2 -

January 5, 1976

b. Specialty Appendix -

-- Pages 131 and 132 are out of sequence.

Sincerely,

A handwritten signature in cursive script, appearing to read "Robert J. Bielo".

Robert J. Bielo
Executive Director



From the Office of the
Executive Director

SUSQUEHANNA RIVER BASIN COMMISSION

5012 Lenker Street • Mechanicsburg, Pennsylvania 17055

January 16, 1976

Mr. James E. Crews, Chairman
ISMG, Binghamton Wastewater Manage-
ment Study
Department of the Army
Baltimore District, Corps of Engineers
P.O. Box 1715
Baltimore, Maryland 21205

Dear Mr. Crews:

The Plan Formulation Appendix for the draft report of the Binghamton Wastewater Management Study was reviewed by the Susquehanna River Basin Commission staff. The following comments are forwarded as requested.

a. The discussion of storm overflow management is inconsistent and confusing. Microscreening of storm overflow at Owego Village is included as part of the total storm overflow management scheme for the study area on pages 356, 477-552 (Discussion of Management Plans), 623 and 624. However, the text on page 565, Figure VII-1 on page 566, and Figure IX-1 on page 625 indicate that microscreening facilities would be constructed at five locations in the City of Binghamton only. The discussion of storm overflow management in the Plan Formulation Appendix is also inconsistent with the Summary Document which was reviewed earlier. The Plan Formulation Appendix mentioned microscreening at Owego Village under each plan while the Summary Document did not. Discussions of storm overflow management during the TAC and ISMG meetings concerned only the five facilities in the City of Binghamton. Records of the TAC and ISMG meetings in the SRBC files do not show that a storm overflow treatment facility at Owego Village was discussed at any of the meetings; however, the microscreening facility for Owego Village is shown for each of the action plans in parts of the draft report. Although addition of a storm overflow treatment facility at Owego Village would further improve the quality of the Susquehanna River and still result in action plans that are compatible with the intent of the SRBC Comprehensive Plan, it would not be consistent with the recommendations of the

Mr. J. E. Crews

- 2 -

January 16, 1976

TAC and ISMG. It is suggested that this matter be clarified with the members of the ISMG and that the report be revised appropriately to provide a coherent discussion of storm overflow management.

b. Page 156, second paragraph, first line - "The ISMG was formed on 22 January 1975" should read, "The ISMG was formed on 22 January 1974" The second paragraph, third line - "Participants originally included in the Southern Tier East Regional Planning Board" should read, "Participants originally included were the Southern Tier"

c. Pages 406 and 406A are identical.

Sincerely,



Robert J. Bielo
Executive Director



From the Office of the
Executive Director

SUSQUEHANNA RIVER BASIN COMMISSION

5012 Lenker Street • Mechanicsburg, Pennsylvania 17055

April 19, 1976

Mr. James E. Crews, Chairman
ISMG, Binghamton Wastewater Mgt. Study
Department of the Army
Baltimore District, Corps of Engineers
P.O. Box 1715
Baltimore, Md. 21205

Dear Mr. Crews:

The Design and Cost Appendix, Preview, Cultural Resources Reconnaissance Report by Dr. Frederick Plug and the U.S. Fish & Wildlife Service Report evaluating the final four wastewater management plans, were reviewed by the Susquehanna River Basin Commission staff. The following editorial comments are forwarded.

Design and Cost Appendix - Some of the loading information presented in the Appendix are inconsistent with those shown in the Summary Appendix which was previously reviewed. These inconsistencies are listed on the attached page.

Sincerely,

Robert J. Bielo
Executive Director

Enclosure

Design & Cost Appendix

Table X-1
On Page 68,
Summary Appendix

Refer To:	Loading-lbs./day	Refer To:	Loading-lbs./day
Pg. 467, Table VIII-5 (Plan 2A)	Total BOD 4,725	Plan 2A*	5,705
Pg. 494, Table VIII-17 (Plan 2B)	Total BOD* / 7,305** Total NOD* / 29,100	Plan 2B Plan 2B	/ 6,905 / 26,500
Pg. 523, Table VIII-20 (Plan 2C)	Total BOD* / 7,305 Total NOD* / 29,100	Plan 2C	/ 6,905 / 26,500
Pg. 552, Table VIII-41 (Plan 3A)	Total SS* 6,330 Total BOD* 4,230/ 5,830 Total NOD* 13,150/ 24,400 Total N 6,380 Total P 1,740	Plan 3A	6,805 4,705/ 6,305 14,450/ 25,100 7,540 1,905
Pg. 641, Table VIII-77 (Plan 4)	Total SS* 585 Total BOD* 585 Total NOD* 675 Total N* 585 Total P* 145	Plan 4	625 625 720 625 555

* - Correct Totals.

** - Warm Months/Cold Months.



SUSQUEHANNA RIVER BASIN COMMISSION

5012 Lenker Street • Mechanicsburg, Pennsylvania 17055

April 27, 1976

Mr. James E. Crews, Chairman
ISMG, Binghamton Wastewater Mgt. Study
Department of the Army
Baltimore District, Corps of Engineers
P.O. Box 1715
Baltimore, Md. 21203

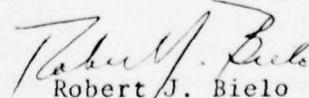
Dear Mr. Crews:

The Susquehanna River Basin Commission (SRBC) staff has reviewed the draft report of the Binghamton Wastewater Management Study and a general staff comment on the overall Binghamton Wastewater Management Study recommendations is provided as requested.

The SRBC was represented on the Interagency Study Management Group and the Technical Advisory Committee through the majority of the study period. The SRBC staff provided input so that the study recommendations would conform to the intent of the SRBC Comprehensive Plan and considers the options provided under Action Plans 2, 3 and 4 to be compatible with the Comprehensive Plan. Plan 2C, recommended as the "Plan of Choice", provides flexibility for meeting more stringent water quality requirements incrementally and to serve as a starting point to achieve higher levels of treatment.

The above statement reflects only informal staff comments and is subject to official action by the Commissioners when the final report is published by the Corps of Engineers.

Sincerely,


Robert J. Bielo
Executive Director



DEPARTMENT OF THE ARMY
BALTIMORE DISTRICT, CORPS OF ENGINEERS
P.O. BOX 1715
BALTIMORE, MARYLAND 21203

NABPL-U

6 AUG 1976

Mr. Robert J. Bielo
Executive Director
Susquehanna River Basin Commission
5012 Lenker Street
Mechanicsburg, Pennsylvania 17055

Dear Mr. Bielo:

Thank you for your letters of 9 December 1975, 5 January 1976, 16 January 1976, 19 April 1976, and 27 April 1976 concerning the draft Report for the Binghamton Management Study. Your editorial comments and suggestions have been incorporated into the text as the final Report was prepared.

One topic needing additional clarification is the combined sewer overflow control facilities which were proposed for the Village of Owego. Early investigations of combined sewer overflow problems concentrated on the Binghamton-Johnson City sewage system with very little emphasis on the Owego Village system. The firm of Shumaker Engineers was already conducting an Infiltration/Inflow (I/I) study for the Binghamton system, and sufficient data had been gathered to adequately assess the problem and formulate reasonable solutions. Although questions were asked about the Owego Village combined sewer system, little data was available to investigate the problem.

Near the end of the Study, though, it became apparent that the size and costs of the proposed secondary sewage treatment plant for Owego Village would be dependent on the amount of I/I to be controlled or eliminated. An examination of flow records and discussions with village officials revealed that large quantities of both infiltration and inflow were occurring in the Village system. Because the I/I Study for Owego Village had not been initiated, it was not possible to estimate the costs of infiltration control. Therefore, it was assumed that correction of infiltration would not be performed and the upgraded Owego Village STP would continue to receive the infiltration flow.



NABPL-U

Mr. Robert J. Bielo

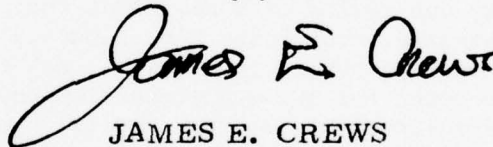
6 AUG 1976

However, a brief analysis was made of the costs of separating the combined sewers in comparison to microscreening of the combined sewer overflows in excess of plant capacity. Microscreening was found to be much less expensive, and since this method was recommended for overflow treatment in Binghamton, it was also considered in the cost analysis of the Owego Village sewage system. Additionally, it was assumed that the small creeks which flow into the sewage system during heavy rainfall would be diverted at minimum cost.

Based on these very preliminary investigations presented in Lawler, Matusky, and Skelly Engineers' final report dated September 1975, the Corps of Engineers' final report was prepared including the costs of microscreening and inflow control for the Village of Owego. As you suggested, the final Plan Formulation Appendix, Design and Cost Appendix, and Summary Report have been revised to reflect a consistent presentation for the necessary actions in the Village of Owego.

I would like to take this opportunity to thank you for your participation in the Binghamton Wastewater Management Study.

Sincerely yours,

A handwritten signature in dark ink, reading "James E. Crews". The signature is fluid and cursive, with a large, sweeping initial "J" that extends to the left.

JAMES E. CREWS
Chairman
Interagency Study Management Group
Binghamton Wastewater Management Study



United States Department of the Interior

NATIONAL PARK SERVICE

NORTH ATLANTIC REGION

150 CAUSEWAY STREET

BOSTON, MA. 02114

IN REPLY REFER TO:

L-7619-NAR-(CE)

NABPL-U CE-Balt. Dist.

December 12, 1975

Mr. William E. Trieschman, Jr.
Chief, Planning Division
Department of the Army
Baltimore District, Corps of Engineers
P. O. Box 1715
Baltimore, Maryland 21203

Dear Mr. Trieschman:

This responds to your letter of 12 November requesting our comments on the first four volumes, Background Information, Public Involvement, Institutional Analysis, and Impact Assessment and Evaluation, of the draft report of your Binghamton Wastewater Management Study for Broome and Tioga Counties, New York.

We would note by our review of these first four volumes that this study is very comprehensive, containing much technical analysis and is experiencing extensive public involvement, all of which befit this era of heightened concern for the quality of the human environment. In the context of this environment, we bear a vital concern for the protection of significant cultural resources. As this study covers a relatively large area wherein a number of cultural resources, both historical as well as archeological, may be adversely affected, we feel that the study and its report should be broadened for better consideration of these resources.

We note the concern of the Committee on Archeological Resources Triple Cities Chapter (p. 51-Public Involvement Appendix), and the brief citation of National Historic Register properties (p. 85 Background Information Appendix). The Impact Assessment and Evaluation Appendix p. 53 and p. 397 are off to a good start reflecting on the preparation of a cultural resources reconnaissance for this study. While it would have been good to have had its results included in this draft report, we would expect to see it in the final report replete with a full consideration for cultural resource protection in balance with other aspects of the human environment.

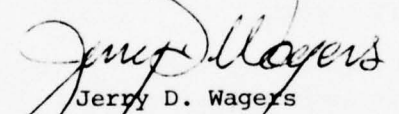


As we do not know who is involved in the cultural resource reconnaissance mentioned above, we would urgently recommend that contact be made with the State Historic Preservation Officer (Mr. Orin Lehman, Commissioner, Parks and Recreation, Room 303, South Swan Street Building, Albany, New York 12223) to assure no oversight of historic sites being considered for nomination to the National Register of Historic Places and for that officer's assistance in impact evaluation of project works on historic sites.

We also urgently recommend contact with the State Archeologist (Dr. Robert E. Funk, New York State Museum and Science Service, Albany, New York 12224) and the New York Archeological Council, 4242 Ridge Lea Road, Buffalo, New York 14226, for assistance in the determination of the probable significance of archeological resources in the project area. Commentaries from these officials should be discussed at appropriate places in the three appendices volumes mentioned above, as well as being displayed in the Comments Appendix to be assembled.

We appreciate this opportunity to review and comment on this important study and report. You should understand that our comments are conveyed on the basis of technical assistance from the National Park Service and do not predispose of any future position of the Department of the Interior.

Sincerely yours,


Jerry D. Wagers
Regional Director



United States Department of the Interior

NATIONAL PARK SERVICE

NORTH ATLANTIC REGION

150 CAUSEWAY STREET

BOSTON, MA. 02114

IN REPLY REFER TO:

L-7619-NAR-(CE)

NABPL-U (CE-Balt. Dist.)

January 8, 1976

Mr. William E. Trieschman, Jr.
Chief, Planning Division
Department of the Army
Baltimore District, Corps of Engineers
P. O. Box 1715
Baltimore, Maryland 21203

Dear Mr. Trieschman:

This responds to your 1 December request for our review and comment on two volumes, Specialty Appendix and Summary Appendix of the draft report on your Binghamton Wastewater Management Study for Broome and Tioga Counties, New York. The following comments are also a continuum of our earlier response, December 12 (copy enclosed) on the first four available volumes of this draft report.

As you will readily detect, our continued concern for the adequacy of this report and study lies in the consideration for the protection of cultural resources. We are most favorably impressed with the comprehensiveness of the report yet unfortunately concern for cultural resources protection is not as adequately covered in these Specialty or Summary Appendices.

The Summary volume, p. 95, mentions a cultural reconnaissance by Dr. Frederick T. Plog, yet no report of his findings nor any other relevant concern for cultural resources is mentioned in Chapter X, IMPACT ASSESSMENT, wherein numerous other aspects of the human environment are discussed.

The Specialty volume, in its Chapter IV under Historical Significance, pp. 83-84 only deals with the history of recreational uses and activities in the area. While there are no units of the National Park System or National Natural Landmarks in Broome or Tioga Counties, and though there are numerous state and local recreational areas to be affected, there are also at least four National Historic Register sites in the City of Binghamton. The potential of archeological and paleontological resources remains to be

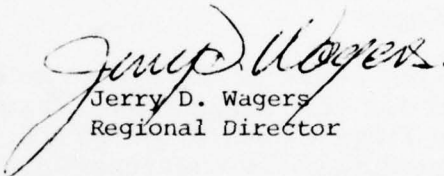


resolved through the reconnaissance reportedly underway (pp. 53 and 397 in the Impact Assessment and Evaluation Appendix--reviewed earlier). Therefore, until such time as this report can satisfactorily discuss cultural resource protection as a result of the reconnaissance mentioned above and leave the reader assured of no oversights by reporting on contacts with the State Historic Preservation Officer, we are compelled to consider this report inadequate.

Our fervent concern for the adequacy of this study/report is that it is a base document to planning of physical works projects that could destroy cultural resources which either remain to be identified, discovered and/or evaluated as well as those recognized. Only by diligent reconnaissance by qualified professionals can such considerations be adequately accomplished.

Again, we appreciate the opportunity to comment on these draft volumes of your report and look forward to seeing revised or final reports adequately handling cultural resource protection.

Sincerely yours,


Jerry D. Wagers
Regional Director

Enclosure



REPLY TO ATTENTION OF
NABPL-U

DEPARTMENT OF THE ARMY
BALTIMORE DISTRICT, CORPS OF ENGINEERS
P.O. BOX 1715
BALTIMORE, MARYLAND 21203

9 January 1976

Mr. Jerry D. Wagers
Regional Director
North Atlantic Region
National Park Service
150 Causeway Street
Boston, Massachusetts 02114

Dear Mr. Wagers:


Your office has received several volumes of the Corps of Engineers' draft Report for the Binghamton Wastewater Management Study in Broome and Tioga Counties, New York. Your letter of 12 December 1975, commenting on the draft report appendices, indicated a need for consideration of cultural resources within the study area.

A cultural resources reconnaissance was performed during the fall of 1975, and the consultant's report was submitted to this office in late December. Therefore, I am inclosing a copy of the consultant's work as a supplement to the draft study report.

The consultant's work will also be forwarded to the State Historic Preservation Officer, the State Archeologist, and the Atlanta office of the National Park Service, as well as other Federal and state agencies working with us on the study. Based on review comments, the final report will be prepared to include the cultural resources reconnaissance information furnished by the consultant.

If you have any questions, please call Mr. Raleigh H. Leef of my staff at (FTS) 922-2531.

Sincerely yours,


WILLIAM E. TRIESCHMAN, Jr.
Chief, Planning Division

1 Incl (2 cys)
As stated





United States Department of the Interior

NATIONAL PARK SERVICE

NORTH ATLANTIC REGION

150 CAUSEWAY STREET

BOSTON, MA. 02114

IN REPLY REFER TO:

L-7619-NAR-(CE)

NABPL-U (Balt. Dist. CE)

January 16, 1976

Mr. William E. Trieschman, Jr.
Chief, Planning Division
Department of the Army
Baltimore District, Corps of Engineers
P. O. Box 1715
Baltimore, Maryland 21203

Dear Mr. Trieschman:

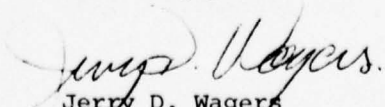
This is to acknowledge our receipt of the cultural resource reconnaissance report relating to your Binghamton Wastewater Management Study (New York). We note the reconnaissance and report were accomplished in the fall of 1975 by D. Stong and F. Plog of the *Department of Anthropology*, State University of New York at Binghamton under contract with the Corps of Engineers.

We are glad to see the completion of this reconnaissance as an essential step in the evaluation of project impacts on cultural resources. We are also pleased that you will utilize the information in this report in conjunction with comments on it in the preparation of the final wastewater management study report. We would expect such considerations to influence project planning toward mitigating measures for the protection of cultural resources.

You have appropriately sent a copy of this reconnaissance report to our Interagency Services Division in Atlanta. That office can fully judge the adequacy of the reconnaissance work and as that office needs to be apprised of potential or probable salvage operations, we will, by copy of this memorandum, defer any commentary on the professional reconnaissance work to that office and request that we receive a copy of such comments.

We ask that you continue to keep this office informed of progress on this study and we look forward to reviewing your final study report.

Sincerely yours,


Jerry D. Wagers
Regional Director





IN REPLY REFER TO:

United States Department of the Interior

NATIONAL PARK SERVICE

Office of Archeology and Historic Preservation
Interagency Archeological Services - Atlanta
730 Peachtree Street, Room 1010
Atlanta, Georgia 30308

H2219-PI(A)

Mr. William E. Trieschman, Jr.
Chief, Planning Division
Baltimore District, Corps of
Engineers
P.O. Box 1715
Baltimore, Maryland 21203

JAN 29 1976

Dear Mr. Trieschman:

We have received and reviewed the report entitled Cultural Resources Reconnaissance Binghamton Wastewater Management Study, Broome and Tioga Counties, New York by David Stong and Fred Plog. We feel that the report comprises an adequate evaluation of the cultural resources in the project area at the reconnaissance level. We are unable to assess fairly the cost estimates provided in the report for the proposed intensive survey effort since a detailed breakdown is not included.

We appreciate this opportunity to comment and we thank you for your efforts on behalf of the cultural resources in the Baltimore District.

Sincerely yours,

Wilfred M. Husted

Wilfred M. Husted
Acting Chief, Interagency
Archeological Services-Atlanta

cc: Dave Clark
North Atlantic Regional Office
150 Causeway Street
Boston, Massachusetts 02114



RESPONSE

The "Cultural Resources Reconnaissance Report," prepared by Dr. Frederick Plog of the State University of New York at Binghamton, is presented in Chapter VIII of the Specialty Appendix. Appropriate references and excerpts from Dr. Plog's report have been incorporated into the text of other appendices as well as the Summary Report.



UNITED STATES
DEPARTMENT OF THE INTERIOR
FISH AND WILDLIFE SERVICE
100 Grange Place
Room 202
Cortland, New York 13045

April 14, 1976

District Engineer
Baltimore District
U. S. Army Corps of Engineers
P.O. Box 1715
Baltimore, Maryland 21203

Attention: William E. Trieschman, Jr.
Chief, Planning Division

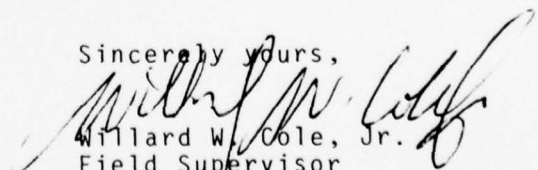
Dear Sir:

This responds to your March 29, 1976 letter with enclosures concerning the Binghamton Wastewater Management Study in Broome and Tioga Counties, New York.

We have no comments on the Design and Cost Appendix draft volume or the Cultural Resources Reconnaissance Report. However, we note that the U. S. Fish and Wildlife Service's Report evaluating the final four wastewater management plans is dated January 30, 1976 with the cover letter dated February 3, 1976. A revised report dated February 13, 1976 was sent to you by letter of February 17, 1976. The latter report replaces the earlier one and should be the one sent out for review.

We have discussed this with Mr. William Haines of your agency via telecon on April 14, 1976 and he has indicated that our February 17 submittal, will be published in the final version.

Sincerely yours,


Willard W. Cole, Jr.
Field Supervisor



RESPONSE

The report dated 13 February 1976 and prepared by the United States Department of the Interior Fish and Wildlife Service is presented as Attachment A to the Impact Assessment and Evaluation Appendix.



IN REPLY REFER TO:

United States Department of the Interior

BUREAU OF OUTDOOR RECREATION

NORTHEAST REGIONAL OFFICE

Federal Building - Room 9310

600 ARCH STREET

Philadelphia, Pennsylvania 19106

DEC 5 1975

Mr. William E. Trieschman, Jr.
Chief, Planning Division
U.S. Army Corps of Engineers
Baltimore District
P. O. Box 1715
Baltimore, MD 21203

Dear Bill:

We have received the first four volumes of the report on the Binghamton Waste Water Management Study for Broome and Tioga Counties, New York. In reviewing these materials, we were pleased to note that the Study addresses outdoor recreation through both a consideration of the General Plan for Broome and Tioga Counties, published by the Southern Tier East Regional Planning Board, and through interviews with municipal park's officials and river users.

We appreciated receiving these volumes and are looking forward to the arrival of the remainder, as we are interested in keeping informed on planning activities within our Northeast Region.

Sincerely yours,

JAMES J. DONOGHUE
Assistant Regional Director
Land Use Coordination





IN REPLY REFER TO:

United States Department of the Interior

BUREAU OF OUTDOOR RECREATION

NORTHEAST REGIONAL OFFICE

Federal Building - Room 9310

600 ARCH STREET

Philadelphia, Pennsylvania 19106

Mr. William E. Trieschman, Jr.
Chief, Planning Division
U.S. Army Corps of Engineers
Baltimore District
P. O. Box 1715
Baltimore, MD 21203

Dear Bill:

This responds to your request for review of the Specialty and Summary Appendixes for the Binghamton Wastewater Management Study for Broome and Tioga Counties, New York. We note that the Specialty Appendix devoted considerable attention to outdoor recreation and riverbank use.

We are concerned that Plan 2C, which furnishes the lowest level of treatment of the three "action" plans considered, was chosen. Page 87 of the Summary Appendix states that "Plans 3 and 4 could provide greater potential benefits than Plan 2C for primary contact recreation on the rivers. However, other factors such as access to the rivers (emphasis added) and swift currents would tend to forestall the realization of these potential benefits." This rationale does not come to grips with recreation needs as they relate to water clean up and the responsibilities and opportunities arising from the implementation of P.L. 92-500. An unprecedented amount of public money is to be obligated to abate water pollution, both in this Study area and nationwide. If immediate steps are not taken to schedule and provide access and shore land protection, the public will fail to realize the benefits from its investment in water pollution control. Outstanding opportunities for public recreation may be irretrievably lost as shoreline land values rapidly escalate and sites are preempted by accelerated developments. We urge that a recommendation encouraging streambank acquisition for access and recreation be included in the Study's Summary, Chapter XII.



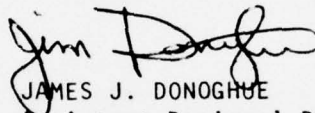
Also, we suggest that future wastewater management plan efforts fully explore the use of acquisition and development programs to achieve shore land access and protection for outdoor recreation opportunities.

We have just received the Plan Formulation Appendix transmitted by your December 10, 1975, letter. Based on a limited review, the above comments apply to it as well.

These comments are provided for technical assistance purposes. Upon receipt of the full report, we will conduct a comprehensive review and forward you a complete statement on this Study.

In the future when comments are requested, we would appreciate receiving the entire report prior to commenting on its various appendixes.

Sincerely yours,

A handwritten signature in dark ink, appearing to read "Jim Donoghue", is written over the typed name.

JAMES J. DONOGHUE
Assistant Regional Director
Land Use Coordination



IN REPLY REFER TO:

4120

United States Department of the Interior

BUREAU OF OUTDOOR RECREATION

NORTHEAST REGIONAL OFFICE

Federal Building - Room 9310

600 ARCH STREET

Philadelphia, Pennsylvania 19106

APR 13 1976

Mr. William E. Trieschman, Jr.
Chief, Planning Division
U.S. Army Corps of Engineers
Baltimore District
P.O. Box 1715
Baltimore, MD 21203

Dear Bill:

This responds to your request for review of the Design and Cost Appendix, and the related materials, Binghamton Wastewater Management Study, Broome and Tioga Counties, New York. We have no comments on these documents.

Sincerely,

JAMES J. DONOGHUE
Assistant Regional Director
Land Use Coordination



RESPONSE

CHAPTER XIII, titled "Recommendations of the District Engineer," in the Summary Report recommends that Broome and Tioga Counties formulate their Riverbanks Improvement Program for acquiring streamside parks "to take full advantage of the improved water quality with its accompanying potential for increased water-oriented recreation."

UNITED STATES DEPARTMENT OF AGRICULTURE
SOIL CONSERVATION SERVICE

700 East Water Street, Syracuse, New York

December 12, 1975

Mr. William E. Trieschman, Jr.
Chief, Planning Division
Department of the Army
Baltimore District, Corps of Engineers
P.O. Box 1715
Baltimore, Maryland 21203

Dear Mr. Trieschman:

We have reviewed the four volumes of the Draft Binghamton Wastewater Management Study transmitted to this office with your letter dated November 12, 1975.

Our comments follow:

A. General

We recognize that this study is directed principally at solving the point source pollution problems in the area and does not appear to be directed at the non-point sources of pollution.

B. Appendix on Institutional Analysis (page 31)

We believe it would be appropriate to include the Broome County and the Tioga County Soil and Water Conservation Districts in Table II-3 - Wastewater Management Institutions Local Level.

Appropriate Act

County Law Article 5D, Section 223.

Designated Institution

Broome County Soil and Water Conservation District
Tioga County Soil and Water Conservation District

Administrator

Chairman, Broome County Soil and Water Conservation District
Chairman, Tioga County Soil and Water Conservation District



Mr. William E. Trieschman, Jr.

December 12, 1975

Interests

Planning Policies, Related Services
Construction, Maintenance, Related Services
Water Supply Services, Management

Is Concerned With

Proper utilization of soil, water and related resources, erosion and sediment control, non-point pollution control.

C. Appendix Background Information

1. Soils beginning on page 28 to page 39

A good deal of this data is not from the most current or up-to-date sources. Accordingly, we have attached copies of these pages which include comments and suggestions that our soil science staff believes to be appropriate.

2. The septic tank interpretations in Table II-5 appear to have been taken from a report written by Carl Pearson in 1966 entitled, "General Soil Areas and Slope Classes in Small Watersheds of Broome County, New York." It would seem to be more appropriate if the interpretation had been taken from the Broome County Soil Survey issued March 1971. The latter was indicated as the source but the material in Table II-5 is not in the Broome survey.

It is not clear which information was taken from the various cited sources.

3. Page 56 - Watershed Protection Programs

The first paragraph can be improved by adding County Law Article 5, Section 223 and Article 5-D, Section 299 after County Small Watershed Protection District Act of 1957.

4. Page 56

The last sentence can be improved by stating, "Following these directives Broome County with the assistance of SCS has

Mr. William E. Trieschman, Jr.

December 12, 1975

constructed dams on numerous small watersheds primarily within Broome County."

5. Attached are photocopies of pages 58 and 59 which more accurately updates particulars and locations of the county small watershed projects.

- D. We have no comments to make on the Public Involvement Appendix of the Environmental Assessment and Evaluation Appendix.

We appreciate the opportunity to review and comment on these drafts.

Warren J. Fitzgerald
acting

Robert L. Hilliard
State Conservationist

Attachments

UNITED STATES DEPARTMENT OF AGRICULTURE

SOIL CONSERVATION SERVICE

700 East Water Street, Syracuse, New York 13210

January 7, 1976

Mr. William E. Trieschman, Jr.
Chief, Planning Division
Department of the Army
Baltimore District, Corps of Engineers
P.O. Box 1715
Baltimore, Maryland 21203

Dear Mr. Trieschman:

We have reviewed the Draft Specialty and Summary Appendixes of the Binghamton Wastewater Management Study prepared by the Baltimore District, Corps of Engineers, and the following comments are submitted:

A. Specialty Appendix

1. Page 79 - Sediment Pollution

This section could be improved with some additions. Although the average sediment delivered at Waverly is judged as not excessive, there are areas of critical erosion in the basin. Some discussion is warranted.

Enclosed is a copy of "Erosion and Sediment Inventory for New York" which includes erosion and sedimentation data for all of the New York watersheds of the Susquehanna Basin.

2. Pages 131 and 132 - Appear to be reversed.

3. Page 132 - BIOLOGICAL FILTER - 3rd paragraph

This paragraph mentions "soils developed under grasslands." This might be reworded since all of the soils in Broome or Tioga County have been developed under forests. We recognize that the present uses may be in grassland.

4. Page 136 - USE OF SOILS FOR CROPS AND PASTURE -
3rd paragraph, 2nd sentence

It would be more accurate to state: "Alfalfa, another important hay crop"



- 2 -

Mr. William E. Trieschman, Jr., Chief

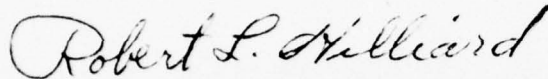
January 7, 1976

B. Summary Appendix

We have no comments on this section.

We appreciate the opportunity to review and comment on these drafts.

Sincerely yours,

A handwritten signature in cursive script that reads "Robert L. Hilliard". The signature is written in dark ink and is positioned above the printed name and title.

Robert L. Hilliard
State Conservationist

Enclosure - EASI

UNITED STATES DEPARTMENT OF AGRICULTURE

SOIL CONSERVATION SERVICE

700 East Water Street, Syracuse, New York 13210

January 27, 1976

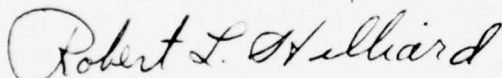
Mr. William E. Trieschman, Jr.
Chief, Planning Division
Department of the Army
Baltimore District, Corps of Engineers
P.O. Box 1715
Baltimore, Maryland 21203

Dear Mr. Trieschman:

This office has reviewed the Plan Formulation Appendix of the Binghamton Wastewater Management Study, dated September 1975 and have no comments to submit on this appendix.

We appreciate the opportunity to review and comment on this study.

Sincerely yours,


Robert L. Hilliard
State Conservationist



RESPONSE

Additions and/or revisions suggested by the U. S. Department of Agriculture, Soil Conservation Service, have been incorporated into the Background Information Appendix, the Institutional Analysis Appendix, and the Specialty Appendix.



DEPARTMENT OF HOUSING AND URBAN DEVELOPMENT
NEW YORK AREA OFFICE
666 FIFTH AVENUE
NEW YORK, NEW YORK 10019

REGION II
26 Federal Plaza
New York, New York 10007

IN REPLY REFER TO:
2.1CPE

Mr. William E. Triesman
Chief, Planning Division
Baltimore District, Corps of Engineers
P.O. Box 1715
Baltimore, Maryland 21203

Subject: Review of Draft Copies Binghamton Wastewater
Management Study, Background Information,
Public Involvement, Institutional Analysis,
Impact Assessment and Evaluation

Dear Mr. Triesman:

This office has no comments on the subject draft documents. We would, however, like to receive copies of the final reports for our library as they are useful in the carrying out of our work.

Sincerely,

Joseph Schiffman
Joseph Schiffman, Director
Community Planning & Development Division

FOR

COMMENTS FROM STATE AGENCIES

New York State Department of Environmental Conservation

50 Wolf Road, Albany, New York 12233



Ogden Reid,
Commissioner

May 24, 1976

Department of the Army
Baltimore District, Corps of Engineers
Post Office Box 1715
Baltimore, Maryland 21203

Attention: Mr. James Crewes

Gentlemen:

The following comments and corrections were generated during a review of draft appendices of the Binghamton Wastewater Management Study. This letter confirms the comments which have been telephoned to your office during our review of the documents:

Summary Appendix

p.3. As a reference to prior studies, the following should be credited: "New York State Department of Environmental Conservation - Wastewater Assimilative Capacity Study - Susquehanna River Basin", Lawler, Matusky and Skelly Engineers (April, 1975).

p.3. - Delete reference to the 1960 Pure Waters Bond Act since there was no such act.

p.19. - Second column, first full paragraph: delete "by 1977" and "at a standard low flow condition (the minimum average 7 consecutive day flow having a probability of occurring once in ten years, the MA-7-CD-10 flow)". Stream standards are in effect now and apply at all times.

p.21. - The first full paragraph should note that DO shall not be lower than 3.0 mg/l for D waters.

p.35. - It should be noted that the computer model for establishing dissolved oxygen concentrations in the river was a Lawler, Matusky, and Skelly study done for NYS DEC.

Background Information Appendix

p. 17. - Statements are made which imply that the Study will make Step 1 facility planning under Section 201 of PL 92-500 unnecessary for projects within the study area and that the adopted plan can be used for application to EPA of Step 2 grants.

Such statements are not accurate. Individual projects within the area will still be required to submit all Step 1 documents.

P. 189. - Summary of Water Quality Problems - First sentence should read: "The water quality standards adopted by NYSDEC and approved by EPA must be met and maintained".

P. 245. - Last sentence should indicate that water quality standards should be met at all times, rather than only during MA-7-CD-10 flows.

Plan Formulation Appendix

P. 6, 7, and 8 - See p. 17 correction of Background Information Appendix.

P. 116 and 117 - The accuracy of statements concerning the Susquehanna stream model should be checked with Lawler, Matusky and Skelly.

P. 222.--Bottom paragraph: remove "as well as in all other alternatives" since 4 and 5 apply only to the baseline plan.

P. 265. - Bottom line should be (MA-7-CD-1).

P. 266. - Second Line - remove the word average before MA-7-CD-10.

pp. 478, 487, 499, 510, 521, 532 - Treatment Levels and Processes: First sentence should be changed to read: "All plants would maintain a level of treatment at least as high as is presently being attained and in no case would either the minimum secondary standards or the stream standards be contravened". Minimum secondary treatment at all plants, as the level indicated in this reference, would result in contravention.

pp. 485, 495, 506, 517, 528, 539, 550 - See page 17 correction of Background Information Appendix.

Specialty Appendix

pp. 18 and 19 - The Tioga County Comprehensive developed projects in all population centers of the County to give an insight into the sizing of projects and costs involved. However, on page 2 of the Comprehensive Study it is noted: "Except for the village of Waverly and the expansion to secondary facilities in the village of Owego and Owego Sewer Districts, there is no clearly defined need for the immediate installation of public sewerage and treatment facilities in the study area". Thus, strictly speaking, projects were not recommended for Nichols and Spencer as is indicated in this reference.

Pages 131 and 132 are transposed.

P. 37. - "All of the processes discussed above require a filtration step ... "How far back does "above" cover?" The activated sludge process would not require filtration.

Page 234 should be removed. It appears in its proper place on Page 284.

p. 256. - The characterization of the heavy metals and the high influent suspended solids at the treatment plants as minor problems is questioned. These are and have been, the major problems at Endicott and Binghamton-Johnson City respectively.

Chapter VII - The possibility of flow reduction by a more strict enforcement of the existing Sewer Use Ordinances is totally ignored although such action could greatly reduce inflow.

Impact Assessment and Evaluation Appendix

p. 31 - Turbidity and Suspended Solids: 80 mg/l should be 30 mg/l.

p. 33 and 258 - "A phytoplankton study ...". In 1967, both Endicott and Vestall had primary plants, though the reference indicates they were raw discharges.

p. 50 - NYS DEC coliform standards have been quoted incorrectly. In the fifth line delete "not" to "... not more than twenty percent of the sample shall exceed a coliform value...".

p. 83-II - Metropolitan Regionalization is not Figure III-2.

p. 97 - First paragraph notes future phosphorus loadings with secondary treatment as 2700 lbs/day. Next paragraph notes that AWT would result in a total phosphorus loading of 2900 lbs/day. This is not logical.

P. 279 - Last line, first full paragraph, change "west" to "east".

p. 374 - Sixth line from top: Do not capitalize five mile. Capitalization may cause some confusion with Five Mile Point.

Pages 36 and 37 are transposed.

Institutional Analysis Appendix

No comments.

Public Involvement Appendix

p. 89 - "illicit" should be "elicit".

P. 95 - "Decimate" should be "disseminate".

The following are additional comments which have not been transmitted to you by telephone:

1) New York State understands the concept of referring to the Baseline condition but cannot under any circumstances accept or support as an implementable alternative any plan that does not attain water quality standards. Throughout the report there are implications and statements that the Baseline Plan, which really should be referred to as a baseline condition, is a possible implementation choice. This is inaccurate and should be corrected in the following instances:

Summary Appendix - pages 56 and 78

Impact Assessment Appendix - pages 10 to 58 inclusive

Background Information - pages 220 to 224 inclusive

2) Ammonia Standard - As noted on page 377 of "Impact Assessments and

Evaluation Appendix", the implication is given that the New York ammonia standard only applies at the place of minimum dissolved oxygen concentration. This is incorrect since the standard applies at any place and time. Hence, if any of the plans resulted in an ammonia concentration greater than 2.0 mg/l at any time, then those plans are not viable plans and should be adjusted as needed.

3) Dissolved Oxygen Occurrence and Impact Upon Fisheries - Throughout the various appendices, there are inaccurate statements and/or implications as to the effect upon the fisheries resulting from the dissolved oxygen levels. An example of this is the following statement from page 95 of "Impact Assessment and Evaluation Appendix":

"To ensure the continued survival of the fish species it would be necessary to maintain DO levels of about 5 mg/l or higher".

On page 401, it is correctly stated:

"No plan would significantly benefit fishery potentials along the entire Chenango River and Susquehanna River lengths in the Binghamton area".

It is important to bear in mind when considering minimum DO levels achieved, that they occur only in a small segment of the Susquehanna River for only a few days during the MA-7-CD-10 flow condition.

All parts of the appendices need to be corrected, in so far as the effect of "model" projections of minimum dissolved oxygen are concerned. Of particular note are the following:

Summary Appendix - page 67
Specialty Appendix - page 113

Impact Assessment and Evaluation Appendix

Impact of Dissolved Oxygen - The question of predicted dissolved oxygen is basic to the entire plan and since no original field work was financed for the stream model, this plan appears to have been based entirely upon the one developed for New York purposes by Quirk, Lawler and Matusky entitled: "New York State Department of Environmental Conservation - Wastewater Assimilative Capacity Study, Susquehanna River Basin". The quality and extent of the model developed for New York use was not considered applicable to all of the planning area (Chenango and lower Susquehanna R.) and New York recommended that, as part of the COE plan, further model verification work be undertaken. Since no new work was accomplished by this study, the plan reliability and usefulness is diminished accordingly.

Up to page 370, there is an erroneous implication as to the impact of DO on the fishery. Some of the concepts which appear after this page should be used to replace the incorrect conclusions in the preceding 370 pages. Some examples of an explanation that are nearly correct are the following:

p. 370 - The following statement would be correct with removal of the bracketed phrases:

"an important fact to keep in mind [when considering minimum DO levels achieved] is that the minimum DO level [is an average daily value and] occurs only in a small segment of the Susquehanna River for only a few days during the MA-7-CD-10 flow conditions (minimum average seven consecutive day flow which will occur on an average of once in ten years)".

p. 370 - "During most of the year and during other years of higher river flows, the minimum instream DO achieved by any plan would be substantially higher than that indicated in the Summary Table".

P. 373 - "None of the wastewater management plans would create any significant fish mortalities due to oxygen depletion. On the other hand, none of the wastewater management plans would have any significant beneficial impacts upon the fishery resources of the Binghamton area, as a whole".

p. 401 - "No plan would significantly benefit fishery potentials along the entire Chenango River and Susquehanna River lengths in the Binghamton area".

Many incorrect comments prior to page 370 exist regarding the impact of DO levels and need to be corrected. In addition, some DO statements are incorrect as the result of "model" refinements (page 74) and these need to be corrected to reflect proper model results.

4) Bacterial Model - The coliform model given on page 117 of "Specialty Appendix" and reflected on Figures IV-4 thru IV-7 is inadequate for stream work and has not been verified by field work. Numerous references may be used supporting this conclusion but perhaps one of the latest is the statement from a recent article appearing in the October 1975 issue of Water and Waste Engineering entitled: "Let's Be Sane About Chlorination" which states:

"Chlorinated effluents have shown rates of regrowth of coliforms in receiving waters by as much as one or two logs within four or five days after chlorination".

The model and figures don't show any regrowth and are therefore in error. Hence, all treatment adequacy based upon the conclusions of the model used in this report and the related conclusions as to change in stream classification are based on erroneous conclusions and should be removed from the report.

Corrections relative to the above should be made in the following places:

Summary Appendix	-	p. 72
Special Appendix	-	p. 117
	-	p. 120
	-	p. 128
Impact Assessment	-	p. 261
	-	p. 243

5) Classifications - Suggestions for changes in classification are technically improper based on the results of the unverified and inaccurate coliform model (as well as other reasons) and are premature if "best usage" is considered. This is supported by the statement on page 48 of "Impact Assessment & Evaluation Appendix": "However, use of the rivers for primary water contact recreation is not foreseen by any community."

It is suggested that all such implications be removed at this time. If substantial funding is made available by EPA under the statewide 208 planning process or Section 106, it may be possible to conduct a coliform model verification study in the Binghamton area. Until more accurate projections can be made, any change in classification is not warranted.

Changes should be made in the Summary Appendix, pages 23 and 43.

6) Specialty Appendix

Page 116 - The determination of MA7CD/10 on the basis of "drainage basin proportions" as indicated at the top of this page is incorrect. Bulletin 71: Streamflow in the New York Part of the Susquehanna River Basin, prepared by the U.S. Department of the Interior, Geological Survey in cooperation with NYS DEC, notes: (page 35) ". . . low flows cannot be reliably estimated by extrapolating known flows per unit area from nearby stations. The usual approach is to make a series of measurements under base-flow conditions at sites where information is needed and to develop frequency relationships by comparing these measurements with records at nearby long-term gaging stations." In the use of any stream flow data it is necessary to adjust the findings by subtracting out the sewage and waste flow that are normal dry weather flows upstream of the station for which the low flow statistic has been developed.

Public Involvement Appendix - September 1975

Page 67 - The statement regarding NYS DEC position on the funding of a short vs. a longer outfall for the proposed Chenango Valley plant is premature and should be qualified or removed. Before NYS DEC makes a final determination, it will have to take into account such items as the following noted from the Impact Assessment and Evaluation Appendix:

"The proposed Chenango Valley plant would be upstream of a proposed river recreational area. Adverse reactions stemming from the knowledge that sewage effluent is being discharged above this park and eventually passes the park, could adversely affect the potential public use of this facility, especially with regards to swimming, boating, fishing or other shoreline activity." Page 107.

Adequate information as to the relative importance and potential for this proposed river recreational area would be needed before a supportable decision can be made on the question of reclassification.

Additional comments will be forthcoming based on review of the following appendices:

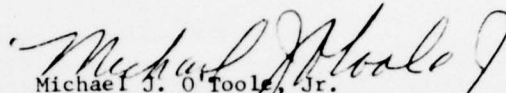
Plan Formulation

Cost and Design

- 7 -

These comments will be forwarded as received.

Very truly yours,


Michael J. O'Toole, Jr.
Chief, Water Quality Planning Group
Office of Program Development,
Planning and Research

cc: EPA, Region II
 Att: C. Durfor
Region 7
 Att: D. Barolo
STERPB
 Att: J. Missavage
Bur. Sewage Programs
 Att: F. O. Bogedain
Survey and Analysis
 Att: W. Berner

New York State Department of Environmental Conservation

50 Wolf Road, Albany, New York 12233



Peter A.A. Berle
Commissioner

June 29, 1976

Department of the Army
Baltimore District, Corps of Engineers
Post Office Box 1715
Baltimore, Maryland 21203

Att: Mr. James Crews:

Gentlemen:

The following comments and corrections of the Plan Formulation Appendix and the Cost and Design Appendix complete our review of the Draft Report. Previous comments and corrections were contained in our letter of May 24, 1976.

PLAN FORMULATION APPENDIX

Pg. 49 - It is mentioned under the "Provision for Collection and Treatment of Wastewater" section that "secondary facilities will be inadequate in West Owego by 1980". This statement is confusing in that it does not indicate whether the inadequacy is a result of the secondary facilities being overloaded or that a greater degree of treatment (AWT) is called for.

Pg. 51 - Although it is recognized that parkland would be enhanced by water quality conditions suitable for the propagation of fish and for swimming, Class B waters are not mandatory for parkland, such as this passage implies. It is suggested that Class B waters "could be achieved by maintenance of the lower coliform levels contained in the standards", implying that this can be accomplished with ease. The absurdity of this statement is highlighted by the description of the effects on the river system of overflows from combined sewers (pg. 53-54) during heavy rains - "a health hazard, high coliform counts and stressful aquatic conditions would exist". This conflict should be resolved.

Pg. 57 - The conflicting passages cited above may originate with the interpretation applied to PL 92-500 in the second paragraph. This states that PL 92-500 requires water quality standards, etc., whereas PL 92-500 actually defines water quality goals, when attainable, (not requirements) of providing for primary contact recreation and protection of aquatic life. Again, these should be interpreted as goals, not requirements, to be achieved when attainable.

Pg. 58 - Third paragraph - refer to comment concerning pg. 57.

- Pg. 70 - Table IV-3, objective B-5, correctly identifies the achievement of "Class B" waters from Binghamton to Owego Village as a goal, not a requirement, in direct contradiction to the interpretation applied to PL 92-500 in previous sections (cited above).
- Pg. 104- An explanation should accompany N.Y.S. Water Quality Standards for coliforms due to the fact that the "Class B" waters total coliform standards of 2,400 (MPN/100 ml), appears more stringent than the higher quality "Class A" waters standard of 5000 (MPN/100 ml), which may be confusing. Class "A" waters are of a higher quality than "Class B", as "A" usage includes drinking after approved treatment, bathing and **all other usage** whereas "B" usage does not include drinking. Bottom of page - TDS - Max. for B&C waters is not 500.
- Pg. 106- The last sentence in the first paragraph should be deleted as it implies that "Class B" waters are of a higher quality than "Class A" waters. See comment for pg. 104.
- Pg. 123- Second sentence in second paragraph - insert "removals" after "high levels of phosphorus".
- Pg. 149- See page 57 comment with reference to "1983 requirements" mentioned under strategy 3.
- Pg. 150- Strategies 6, 7, 8, 9 - see Pg. 149 comments.
- Pg. 152, 165, 195 - See comment for Pg. 469.
- Pg. 232, 233, 250 - Throughout the text numerous references are made to D.O. values which are never properly identified, i.e. either as minimum or as minimum daily average values. This inconsistency creates confusion; if 4 mg/l and 5 mg/l are to be associated with minimum and minimum daily average respectively, this association should be defined at the beginning of the strategy descriptions.
- pg. 233- The fourth sentence under the D.O. section should read, "The NYS DEC standards of 4 mg/l minimum daily and 5.0 mg/l minimum daily average ..."
- Pg. 247- Re the second paragraph - see comment 1 (pg. 3) of the letter from Michael O'Toole to COE dated May 24, 1976.
- Pg. 271- Should specify whether coliforms are total or fecal.
- Pg. 296- Should specify 1000 MPN/100 ml as a total coliform density.
- Pg. 469, 554-556, 591-592, 617, 624 - Mr. Eugene Seebald, Director of the Division of Pure Waters, NYS DEC, clarified NY State's position with respect to interpretation of the D.O. standard and its application for stream modeling purposes in a letter to Mr. James Crews, Balt. Dist., COE, dated April 25, 1975. "For determination of waste assimilative capacities utilizing steady-state dissolved oxygen models, the minimum, at anytime, dissolved oxygen standard is applied as the critical limiting condition. Therefore, for Class A, B, and C streams a D.O. of 4.0 mg/l would apply". On the basis of this interpretation the minimum average D.O. column in tables VII-1, VII-17, IX-1 (which should read minimum daily average) should be replaced with a minimum instantaneous D.O. column representing the minimum D.O., at anytime, generated by the various plans. In addition, the minimum daily average

values for 2020 violate N.Y. State standards (5 mg/l) for all plans up to and including 2 C. It is acknowledged that additional facilities could be added at a later date to achieve the D.O. standard and that biologically the plan may be feasible (pg. 591) but this must not be construed as permission to violate State standards, which is totally unacceptable to New York State. Acceptance of Plan 2C contradicts the methodology employed in the selection of strategies for further study on page 152: "Strategies with a minimum dissolved oxygen of less than four were not acceptable as they would not meet the existing State standards by the year 2000". The final recommendations choose Plan 2C and it will not meet State standards by the year 2020. It is highly questionable whether Plan 2C is an acceptable alternative for the above reasons.

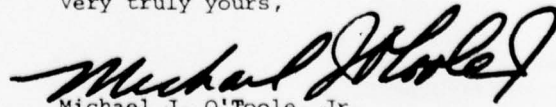
New York State's acceptance of Plan 2C at the ISMG meeting of September 30, 1975, was based on the Corps and Consultants assurances that no contravention of stream standards would occur (i.e. - minimum instantaneous D.O. at 4.0 mg/l and minimum daily average D.O. at 5.0 mg/l). The "Plans for Choice" brochure which was distributed at the public meeting held in Binghamton on November 25, 1975, and the Summary Appendix, which was released to the public at the same time, both assured that all plans except baseline would meet stream standards.

The Plan Formulation appendix contradicts the foregoing and indicates that contravention of a five mile stretch of stream between Endicott and Owego would occur under plans 2A, 2B, and 2C, by 1995, based on available data and the theoretical model. Since the key point of the whole study is the formulation of a plan which will meet New York State Stream standards as mandated by Public Law 92-500, no contradictions or hedging can exist. Somewhere in the final report, probably in the Summary Section, a plain language assessment of the various plans needs to be made and all other sections of the report must be consistent with that assessment. If, in fact, Plans 2A, B and C will not meet stream standards, they will not be acceptable to New York State, except perhaps as an interim (1995) step during which further study of stream conditions would determine what other steps will be required to assure meeting water quality standards through the year 2020.

COST & DESIGN APPENDIX

Pg. 151-154, 159-184 - Refer to the "impact of dissolved oxygen" section on page 4 of the letter from Michael O'Toole to COE dated May 24, 1976 for comments pertinent to the D.O. model employed in the generation of stream D.O. data for the study.

Very truly yours,



Michael J. O'Toole, Jr.
Chief, Water Quality Planning Group
Office of Program Development
Planning and Research

JR:MOT:ebt

cc: Mr. C. Durfor, US EPA
Mr. D. Barolo, Reg. #7
Mr. Missavage - Southern Tier East RPB
Mr. F. Bogedain - Bur. of Sewage Programs
Mr. W. Berner - Survey & Analysis



Peter A.A. Berle
COMMISSIONER

STATE OF NEW YORK
DEPARTMENT OF
ENVIRONMENTAL CONSERVATION
ALBANY, NEW YORK 12233

July 7, 1976

Dear General McGarry:

New York State Department of Environmental Conservation has completed its review of the Binghamton Wastewater Management Study reports. Under the agreement between the Department of the Army Corps of Engineers and the State of New York Department of Environmental Conservation the major study work items were to include the following:

- a) an evaluation of the aim to achieve maximum water quality
- b) an evaluation of institutional alternatives appropriate for implementing the wastewater plan
- c) an evaluation of cost sharing alternatives appropriate to the wastewater plan
- d) formulation of a total wastewater management system for the area
- e) detailed planning for a limited number of system projects.

The reports as completed have accomplished the major work elements. New York State appreciates the Corps of Engineers interest in preparing the Binghamton Wastewater Management Study and for concentrating considerable time and investment into this particular area. These study reports will be major source documents that will be considered by New York State in the development of a Water Quality Management Plan for the Susquehanna River Basin as required under Section 208 of P.L. 92-500.

Sincerely,



Peter A.A. Berle

Robert S. McGarry
Brigadier General
USA Department of the Army
Baltimore District, Corps of Engineers
P.O. Box 1715
Baltimore, Maryland 21203



DEPARTMENT OF THE ARMY
BALTIMORE DISTRICT, CORPS OF ENGINEERS
P.O. BOX 1715
BALTIMORE, MARYLAND 21203

NABPL-U

6 AUG 1976

Mr. Michael J. O'Toole, Jr.
Chief, Water Quality Planning Group
Office of Program Development
and Research
New York State Department of
Environmental Conservation
50 Wolf Road
Albany, New York 12233

Dear Mr. O'Toole:

Thank you for your letters dated 24 May 1976 and 29 June 1976 concerning the draft Report for the Binghamton Wastewater Management Study in Broome and Tioga Counties, New York. Editorial comments and suggestions have been incorporated into the text as the final Report was prepared. Several substantive comments, however, need further clarification and will be discussed in this letter.

Baseline Plan

The Baseline Plan in the Study Report is presented as a "no action" or "without" projection and serves as a comparative base in assessing the impacts of the other "action" alternatives. The Baseline Plan, in various levels of refinement, was carried through each stage of the Study for this purpose. It is described as a final plan in the Report documents so relevant comparisons of the "action" plans can be made against a standard "no action" condition. The Baseline Plan is presented not as an implementation choice but as the probable consequence of static physical facilities and management programs in future years (an unlikely event in the case of New York State). In this regard, NYSDEC has noted the water quality violations which would result from "no action," and has appropriately supported one of the "action" plans.



6 AUG 1976

NABPL-U

Mr. Michael J. O'Toole, Jr.

Impact of Low Dissolved Oxygen Concentrations on Fisheries

The comment that was made in your 24 May 76 letter that the first sections of several Report appendices, especially the Impact Assessment and Evaluation Appendix, contain erroneous implications as to the impact of low dissolved oxygen (DO) concentrations upon fisheries in Broome and Tioga Counties. The work documented in these sections was performed early in the Study when information was limited and impacts of low DO levels were uncertain. Each section of the Study is written to reflect the best information which was available at the time, thereby maintaining the chronological presentation of the findings and decisions. As better data was developed and investigations performed in more detail, impacts were subsequently revised based on the new knowledge. Consequently, Stage III-2, the last section of the Study, represents the most detailed information developed during the Study. The NYSDEC has indicated general agreement with the impact sections of these last chapters.

Stream Classifications

It is not the intent of the Study Report to recommend changes in stream classifications for the Susquehanna River between Binghamton and Owego Village, New York. However, one publicly expressed desire of the Citizens Advisory Committee (CAC) was to determine if higher classifications for the Susquehanna River could be achieved; and if they could, the associated impacts and costs. Therefore, one objective of the Study was to evaluate the technical merits of the CAC's question and report on the results of the investigation. Most of this work is presented in Chapter IV of the Specialty Appendix and is summarized in the other appendices. While the Study Report does contain sufficient information to answer the CAC's questions, the Report does not contain appropriate detail for making a firm decision regarding higher stream classifications downstream of Binghamton. The Study Report, though, can be used as a basis for accomplishing more detailed work on this possibility, perhaps in NYSDEC's statewide 208 planning process.

Bacterial Model

The bacterial model as described on page 117 of the Specialty Appendix is the standard application of Chick's Law for predicting coliform die-off rates. This basic relationship was used in an attempt to answer the questions of the CAC concerning the upgrading of Class C waters to Class B waters for primary contact recreation, as discussed in the previous paragraph. According to Chick's Law, no

6 AUG 1976

NABPL-U

Mr. Michael J. O'Toole Jr.

violations of Class B water quality standards would occur with any of the three action plans described in the final chapters of the Report. It is recognized, however, that recent texts and articles have documented departures from Chick's Law at sampling points downstream of effluent discharges. Any consideration for changing stream classifications, therefore, should be accompanied by a detailed examination of effluent disinfection and stream responses.

Prediction of Dissolved Oxygen Concentrations

Another major indicator of organic pollution in a waterway is the concentration of dissolved oxygen. In order to predict the DO concentrations in the Susquehanna River, the Binghamton Wastewater Management Study employed the DO model developed by Lawler, Matusky, and Skelly Engineers under contract to the NYSDEC for the "Wastewater Assimilative Capacity Study for the Susquehanna River Basin." This computer model was used in predicting DO levels for the Susquehanna River between Binghamton and Owego Village. A similar but simplified version of the DO model, with appropriate revisions, was used to predict DO levels in the Chenango River.

Early in the Binghamton Wastewater Management Study, the DO model was undergoing continued refinement for final submission to the NYSDEC. At the time, it was not clearly determined if the model predicted the minimum instantaneous value (NYSDEC standard - 4.0 mg/l) or the minimum daily average value (NYSDEC standard - 5.0 mg/l) for the dissolved oxygen concentration because of the scrubbing of algal and photosynthesis effects from the model. Hence, predicted DO levels were listed simply as "minimum" values and are documented as such in the early chapters of the Report. At the request of Mr. Eugene F. Seebald in his letter dated 25 April 1975, no alternative with a "minimum" DO concentration greater than 4.0 mg/l was dropped solely on the basis of the DO model predictions.

Near the end of the Study during Stage III-2, the consultant performed additional investigations and determined that the DO model predicted a value very close to the minimum daily average, with the minimum instantaneous dissolved oxygen being about 0.5 mg/l lower. In Stage III-2 of the draft Report, various tables were presented with the intention of showing the minimum daily average value for dissolved oxygen. As evidenced in your letter of 29 June 1976, some confusion existed as to both the heading and interpretation of the DO column in these tables. Therefore, the final report will show two columns in the summary tables - one column with the minimum instantaneous DO concentration and a second column with the minimum daily average DO concentration. Additionally, the text of the Stage III-2

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Mr. Michael J. O'Toole, Jr.

chapters in both the Plan Formulation Appendix and the Summary Report has been revised to clearly indicate the appropriate designation for the DO concentrations predicted by the computer model.

Recommended Plan

The recommendation of Plan 2C was a joint consensus by the individuals of the Interagency Study Management Group (ISMG) based on the discussion of the consultant's report on 30 September 1975. Plan 2C would achieve a minimum instantaneous DO concentration above 4.0 mg/l throughout the planning period to the year 2020. Furthermore, Plan 2C would achieve a minimum daily average DO level above 5.0 mg/l at least until 1994. After 1994, isolated occurrences of minimum daily average DO levels between 4.5 mg/l and 5.0 mg/l (violating NYSDEC standards) may happen during the most critical conditions at the MA-7-CD-10 flow. These depressions of DO levels below the minimum daily average standard of 5.0 mg/l would occur for a maximum of 5.5 miles in the Susquehanna River downstream of Endicott. Biologically, it was concluded that the fishable-swimmable goal of Public Law 92-500 providing for propagation and maintenance of native fish species could be achieved by Plan 2C. Aquatic impacts associated with isolated occurrences of minimum daily average DO levels below 5.0 mg/l would not be significant with Plan 2C.

Consequently, ISMG participants (including the NYSDEC) suggested that Plan 2C be recommended as a cost-effective means of achieving State standards and fishable-swimmable waters, at least as a short-range plan until the mid - 1990's. Plan 2C would provide ample opportunity to verify the computer-modeling procedure with actual field samples while still maintaining NYSDEC water quality standards. Based on the results of the sampling program and model verification, firm decisions can then be made regarding the necessity for higher levels of treatment in years after 1994. If necessary, Plan 3C would be adopted which would provide nitrification at the Binghamton - Johnson City STP for an additional capital cost of about \$4,000,000. The ISMG participants felt this additional expense for nitrification facilities was not justified until the need is more firmly established through refined model calibration.

As stated in the Summary Report (pages 91&92), Plan 2C was recommended by the ISMG because it would furnish "... a good foundation on which to build any future plans for wastewater management.... Instream water quality standards would be achieved at least to the mid 1990's with Plan 2C and possibly longer. If higher levels of treatment are ever required, this plan would lend itself

6 AUG 1976

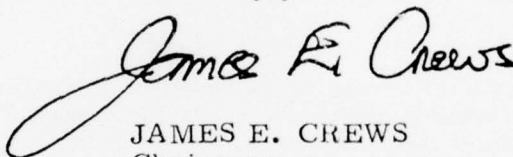
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Mr. Michael J. O Toole, Jr.

to staged construction in either Broome or Tioga County.... In summation, then Plan 2C provides a great deal of flexibility for achieving water quality standards in an incremental fashion and also for expending limited Federal and State grant money in a rational and effective manner." Given these considerations, the Report recommends Plan 2C as the cost-effective Plan of Choice.

I trust the preceeding paragraphs have answered your questions and concerns regarding the Binghamton Wastewater Management Study. Your letters of 24 May 1976 and 29 June 1976 and this response will become part of the Comments Appendix to be included as part of the final Report. Distribution of the final Report will be accomplished with a single mailing after all volumes have been printed. Once again, thank you for your thorough review of the draft Report.

Sincerely yours,

A handwritten signature in cursive script that reads "James E. Crews". The signature is written in dark ink and is positioned above the typed name and title.

JAMES E. CREWS
Chairman
Interagency Study Management Group
Binghamton Wastewater Management Study

COMMONWEALTH of PENNSYLVANIA



DEPARTMENT OF ENVIRONMENTAL RESOURCES

POST OFFICE BOX 2063
HARRISBURG, PENNSYLVANIA 17120

March 3, 1976

In reply refer to:
File: 18-7.12

Mr. William E. Trieschman, Jr.
Chief, Planning Division
Department of the Army
Baltimore District
Corps of Engineers
P. O. Box 1715
Baltimore, Maryland 21203

Dear Mr. Trieschman:

We have reviewed the drafts "Plan Formulation Appendix", "Specialty Appendix" and the "Summary" of the "Binghamton Wastewater Management Study". The findings of this review are that we are in general agreement with the plan that has been developed. Since the Binghamton Wastewater Management Study has been a cooperative endeavor supported by Federal, State, local and interstate agencies, as well as concerned citizens, implementation of the recommendations made in the study should not present any major problems and should contribute in maintaining good water quality for future generations living along the Susquehanna River in Broome and Tioga Counties.

We will appreciate receiving the final copy of the report in order to keep abreast of the planning effort of the study as it is translated into observable improvements for the Susquehanna River environment.

Very truly yours,

Abdul R. Merchant

Abdul R. Merchant
Sanitary Engineer
Office of Comprehensive Water
and Wastewater Planning
Division of Water Supply and Sewerage
Bureau of Water Quality Management

COMMONWEALTH of PENNSYLVANIA



DEPARTMENT OF ENVIRONMENTAL RESOURCES

POST OFFICE BOX 2063
HARRISBURG, PENNSYLVANIA 17120

May 10, 1976

Mr. William E. Trieschman, Jr., Chief
Planning Division
Department of Army
Baltimore District
Corps of Engineers
P. O. Box 1715
Baltimore, Maryland 21203

Dear Mr. Trieschman:

We have reviewed the draft volume "Design and Cost Appendix", along with the "Cultural Resources Reconnaissance Report" and the "U. S. Fish and Wildlife Service Report" which were forwarded to this office by letter dated March 29, 1976. We are in agreement with the development and methodology of the engineering analysis as well as the detail design and cost of the final plan as presented in the design and cost appendix.

We are also in general agreement with the conclusions reached and the recommendations made in the U. S. Fish and Wildlife Service Report and have no comments at the present time.

We will appreciate receiving the final copy of the report in order to keep abreast of the planning effort of the study as it is translated into observable improvements for the Susquehanna River environment in general and for the future generations of Broome and Tioga counties in particular.

Sincerely yours,

Abdul R. Merchant

Abdul R. Merchant
Office of Comprehensive Water
and Wastewater Planning
Division of Water Supply and Sewerage
Bureau of Water Quality Management

New York Archaeological Council

archaeological resource management service



January 21, 1976

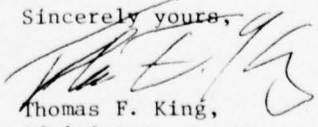
William E. Trieschman, Jr.
Chief, Planning Division
U.S. Army Corps of Engineers
Baltimore District
P.O. Box 1715
Baltimore, Maryland 21203

Dear Mr. Trieschman:

Thank you for sending us the draft Binghamton Wastewater Management Study and the copy of the cultural resource report by Mr. Stong and Dr. Plog. I have briefly reviewed the documents and feel that your archaeologists have done quite a good job. I am, however, sending copies of the report to three archaeologists more experienced than I in the history and prehistory of the region with the request that they provide you with comments from their perspectives.

From the standpoint of a concern for cultural resource management planning, I do think the cultural resource study has some weaknesses. You are obviously engaged in a rather large-scale, regional study that deals with many alternatives and a wide range of management problems. The cultural resource study, however, does not address the entire region in any very useful detail, and does not analyze the differential impacts of different management alternatives. Presumably what you need at this level of your study is a regional archaeological overview that provides a concrete basis for (a) predicting historic and prehistoric site densities in the areas to be directly or indirectly affected by the various project alternatives, (b) establishing standards by which the significance of resources that turn out to be threatened can be measured, and thus (c) projecting the relative archaeological destructiveness of each project alternative, with recommendations for mitigation of this destructive potential. It is apparent that you do not have this kind of overview as a result of your cultural resource study. While it appears that the archaeologists fulfilled the terms of their contract, the contract seems to have limited them in ways that resulted in their provision to you of a report that fails to mesh well with the rest of the study, and does not really give you adequate archaeological input into plan formulation.

Sincerely yours,


Thomas F. King,
Administrator

cc: Dr. Fred Plog
Mr. David Stong

4242 Ridge Lea Road, Buffalo, New York 14226 Tel. (716) 831-1144

Rochester Museum & Science Center

BAUSCH HALL STRASENBURGH PLANETARIUM EISENHART AUDITORIUM SCHOOL OF SCIENCE AND MAN



February 6, 1976

William E. Trieschman, Jr.
Chief, Planning Division
U.S. Army Corps of Engineers
Baltimore District
P.O. Box 1715
Baltimore, Maryland 21203

Dear Mr. Trieschman:

Thomas King, formerly of the New York Archaeological Council, has asked me to comment on the document entitled "Cultural Resources Reconnaissance Binghamton Wastewater Management Study, Broome and Tioga Counties, New York " by David Strong and Fred Plog.

Although I do not have a great deal of time to go into any detail, I feel that the report could be useful to one starting on a regional study. On the whole I feel that a more in-depth analysis should have been presented both from the literature and the field searches. With such large areas, however, under consideration I am sure that there were limitations beyond anyone's control.

The basic methods do parallel various surveys that the RMSC has found satisfactory in dealing with much smaller acreage. I would expect that this report, in its next phase of more intensive survey as planning progresses, will be an excellent base from which to operate.

We are all searching for efficient methods to facilitate cultural resource management. Tom King in his letter of January 21, 1976 certainly suggests some good points to ponder. The so called weaknesses in the report are, however, not easy to correct. Let us hope that the archaeological profession can work out standards in the near future.

Sincerely,

Charles F. Hayes III, Director
Rochester Museum
Curator of Anthropology

cc: Tom King
Eli McDowell

THE UNIVERSITY OF THE STATE OF NEW YORK
THE STATE EDUCATION DEPARTMENT
ALBANY, NEW YORK 12234

NEW YORK STATE MUSEUM AND SCIENCE SERVICE

ANTHROPOLOGICAL SURVEY

May 14, 1976

Mr. William E. Trieschman, Jr.
Chief, Planning Division
Department of the Army
Baltimore District, Corps of Engineers
P.O. Box 1715
Baltimore, Maryland 21203

Dear Mr. Trieschman,

I have reviewed the Draft Report and the Cultural Resources Reconnaissance Survey Report for the Binghamton Wastewater Management Study for Broome and Tioga Counties.

Although the Survey Report, prepared by the Department of Anthropology of the State University of New York at Binghamton, is very general in nature and the findings as yet inconclusive, the data presented does seem to indicate the potential for significant cultural resources in the areas proposed for construction of this project.

I trust that as the locations for this construction become more specific during design development, that you will undertake the level of detailed field study required to locate and describe these cultural sites in an effort both to determine their significance and also to allow for their maximum protection.

If this office can be of any further aid, please contact us.

Sincerely yours,

Robert E. Funk
Robert E. Funk
State Archeologist

RESPONSE

Detailed field surveys of cultural resources will be the responsibility of local agencies receiving federal grants for the planning and design of specific facilities (Step I and Step II of Section 201, P. L. 92-500). Assessments of significance during the detailed planning and design steps will allow maximum protection during construction.

COMMENTS FROM REGIONAL AND
LOCAL AGENCIES



Broome County Executive
Broome County Office Building
Government Plaza
Binghamton, New York 13902
Box 1766
(607) 772-2100

Edwin L. Crawford, County Executive

January 21, 1976

Department of the Army
Baltimore District, Corps of Engineers
P. O. Box 1715
Baltimore, Maryland 21203

Attention: Robert S. McGarry
Colonel, Corps of Engineers
District Engineer

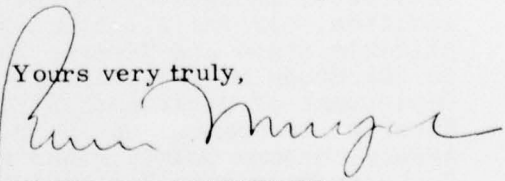
Dear Colonel McGarry:

This will acknowledge receipt of your letter dated January 5, 1976 and the enclosed draft report referred to therein.

We have noted your request for a review of the plan together with a letter from this office expressing an opinion on behalf of Broome County.

I am asking Commissioner Missavage and other interested county officials to undertake this review so that an early response can be made.

Yours very truly,


EDWIN L. CRAWFORD
COUNTY EXECUTIVE

ELC gm

cc:
Joseph M. Missavage, Commissioner of Planning



Broome County Executive
Broome County Office Building
Government Plaza
Binghamton, New York 13902
Box 1766
(607) 772-2100

Edwin L. Crawford, County Executive

23 February 1976

Colonel Robert S. McGarry
District Engineer
Department of the Army
Baltimore District
Corps of Engineers
P O Box 1715
Baltimore, Maryland 21203

Dear Colonel McGarry:

In response to your request of January 5, 1976, for review of the Binghamton Wastewater Management Study and an expression of opinion and concurrence with the recommendations contained therein, permit me to offer the following comments on behalf of the County of Broome.

At my request, the Broome County Planning Department has reviewed the Study and recommended that the County of Broome approve and adopt the conclusions set forth therein and initiate the long-range planning necessary for their implementation. The County of Broome has had a long history of planning for wastewater management. It is the firm belief of the local staff persons who participated in and reviewed the Study that the recommendations set forth are based on a thorough inventory, analysis and consideration of the needs for wastewater management in the Broome-Tioga region. In addition, careful attention has been given to all applicable state and federal requirements. The inclusion in the Study of representatives from the New York State Department of Environmental Conservation, Susquehanna River Basin Commission, U. S. Environmental Protection Agency, Broome County Planning Department and the Southern Tier East Regional Planning Board, as well as representatives from the community at large, will testify to this.

My conviction is reinforced by the fact that the conclusions arrived at in the Binghamton Wastewater Management Study pertaining to Service Area Number 1 (Chenango Valley) reaffirm those made in the report completed by

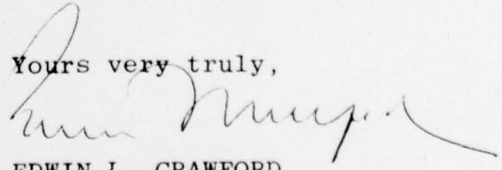
Robert J. Martin, P.E., concerning the same subject. This fact is especially important as the Resolution of the Broome County Legislature adopting the recommendations contained in the Martin report made provision for modification of the Legislature's action based upon further study effort. Because the Wastewater Management Study confirms the Martin recommendations, the County of Broome is now in the position to begin the process of implementation with respect to that Service Area.

Finally, in a letter dated April 23, 1975, from the New York State Department of Environmental Conservation, the statement was made that, based upon previous reports completed for the county and the Binghamton Wastewater Management Study (then in progress), planning for the Southern Tier East Region (Broome and Tioga Counties) is sufficient to identify the next step for the Pure Waters Program.

It is the conclusion of the County of Broome that the adoption of the recommendations set forth in the Study will signify that most of the requirements of Area-wide Waste Treatment Management Planning as promulgated in § 208 of the Federal Water Pollution Control Act Amendments of 1972 (PL92-500) will be satisfied. This is particularly important in terms of the county's eligibility for implementation grants from the federal government.

In light of the above comments and on behalf of the County of Broome, I wish to express my endorsement of, and concurrence with, the recommendations set forth in the Binghamton Wastewater Management Study.

Yours very truly,


EDWIN L. CRAWFORD
COUNTY EXECUTIVE

ELC g

cc: N Shadduck, Chmn, County Legislature
T McAvoy, Chmn, Community Affairs Comm.
S Hayes, STERP
C Coleman, Commr of Public Works
R Martin, P.E.
J Missavage, Commr of Planning
R Austin, Health Dept.
J Murray, County Attorney

TIOGA COUNTY LEGISLATURE
County Office Building
Owego, New York 13827

Planning

Telephone
607-687-0304

May 7, 1976

General Robert McGarry
Army Corps of Engineers
Baltimore District
Baltimore, Maryland

Dear Sir:

I have reviewed your Binghamton Waste Water Management Survey and there is a lot of valuable information contained in this report.

Your plans for the Owego Area have been implemented. The secondary sewage treatment plant in the Village and Town of Owego is already being implement.

As you know, the majority of this study was mostly concerning the Broome County area, however, it is a worthwhile study for the parties concerned.

Very truly yours,



Edward D. Hubbard, Chairman
Tioga County Legislature

EDH/clt



SOUTHERN TIER EAST REGIONAL PLANNING DEVELOPMENT BOARD

COUNTY OFFICE BUILDING
GOVERNMENT PLAZA P.O. BOX 1786
BINGHAMTON, NEW YORK 13902
PHONE 607 772 2856

EXECUTIVE DIRECTOR
JOSEPH M. MISSAVAGE

DIRECTOR
STANLEY I. HAYES, JR.

April 28, 1976

Mr. James E. Crews
Chairman, Interagency Study
Management Group
Binghamton Wastewater Management Study
Baltimore District, Corps of Engineers
P.O. Box 1715
Baltimore, Maryland 21203

RE: REVIEW OF DRAFT DOCUMENTS-BWMS

Dear Mr. Crews:

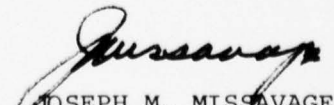
The Southern Tier East Regional Planning Development Board has reviewed the draft documents transmitted to this office 29 March 1976.

Generally, STERPDB finds the information contained within the reports to be most acceptable. Permit me to suggest, however, that the Preview contain a list of members and their corresponding agencies included in the ISMG. In this way, should the reader be interested in obtaining more information or asking questions about the study, names of contact persons will be readily available.

I am somewhat concerned about the conclusions drawn in the Cultural Resources Reconnaissance Report. Dr. Plog indicates that his research is preliminary and that a more detailed effort will be required prior to implementation of a selected alternative. The report does not indicate the agency that would be responsible for and bear the cost of this study effort. This should be made clear to the reader.

I am looking forward toward receiving the final report of the Binghamton Wastewater Management Study.

Sincerely yours,


JOSEPH M. MISSAVAGE
EXECUTIVE DIRECTOR

JMM/bp

RESPONSE

The Preview has been revised to include a list of the names and addresses of the Interagency Study Management Group participants and the chairman of the Citizens Advisory Committee.

As noted in the response to the concern for cultural resources, detailed field surveys will be the responsibility of local agencies receiving federal grant money for planning, design, and construction of specific wastewater facilities.



Broome County Health Department
Environmental Health Division
20 Wall Street
Binghamton, New York 13901
(607) 772-2489

Edwin L. Crawford, County Executive
Cameron F. McRae, M.D.
Commissioner of Health
Roland M. Austin, Director
Environmental Services

May 6, 1976

Mr. James E. Crews, Chairman
Inter-Agency Study Management Group
Binghamton Wastewater Management Study
Department of the Army
Baltimore District, Corps of Engineers
P. O. Box 1715
Baltimore, Maryland 21203

Dear Mr. Crews:

The Broome County Health Department, at your request, has reviewed the Binghamton Wastewater Management Study for Broome and Tioga Counties, New York and adds its endorsement to the recommendations made in that report and summarized in Chapter XII of the Summary Appendix.

The thoroughness and comprehensive scope of this two-year-study is evident in the report itself with its extensive coverage of background data, wastewater flow analyses, design possibilities and plan formulations. In addition, citizens' participation has been achieved to a degree and intensity rare in other studies of this kind. A great deal of credit must go to the very active Citizens' Advisory Committee and its vigorous leadership which made possible valuable contributions from interested citizens with a wide variety of environmental interests and concerns.

The final choice of Plan 2 C includes consideration of land application of liquid sludge, a procedure offering much promise for the re-use of nutrient material presently being wasted in too many American communities. Broome County is already in the forefront of efforts to develop land application methods, with an experimental project already under way involving the Binghamton-Johnson City Sewage Treatment Plant, local farming interests, the State University of New York at Binghamton, and local Health Department.

Plan 2 C also proposes the construction of a new secondary plant to serve the Chenango Valley area of Broome County and this decision was reached only after thorough consideration of other alternatives enabling the County of Broome and the concerned communities to proceed with the implementation providing sewerage service for that important area.

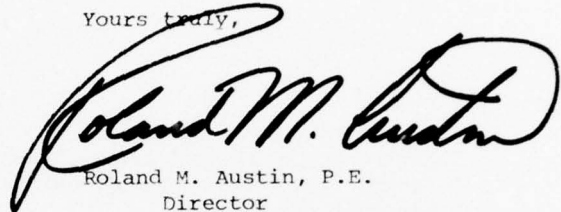
Mr. James E. Crews

- 2 -

May 6, 1976

This study has provided the people of Broome County with an important planning document enabling us to proceed with the much needed construction of those sanitary facilities including control of infiltration and inflow control, main trunk lines, and sewage service areas that are so vitally important to a growing modern community.

Yours truly,

A large, stylized handwritten signature in black ink, reading "Roland M. Austin". The signature is written in a cursive style with a large, looping initial "R".

Roland M. Austin, P.E.

Director

Environmental Health Services

Broome County Health Department

RMA:jm

cc: Dr. McRae
Mr. Edwin Crawford
Mr. Joseph Missavage
Mr. Norman Shaddock
Mr. Thomas McAvoy

COMMENTS FROM CITIZENS AND
OTHER INTERESTED PARTIES

Remarks from the CAC regarding its participation in the Binghamton Wastewater Management Study

The CAC is very grateful for the opportunity to participate in the Binghamton Wastewater Management Study. From our viewpoint having a CAC in such a study is a good idea and we hope that the Corps will continue this procedure for public participation.

The Citizen's Advisory Committee did not function without difficulty. We list here some of the problems encountered in hopes that this will help future CAC to avoid them.

Membership

From a total membership list of approximately 40 we had about 20 who were "reasonably" active and of these only about 10 who were active throughout the entire duration of the study. Thus about half of the membership never participated at all. Nor did they ever contact the CAC chairman or the Corps requesting that they be removed from the committee.

The active members of the CAC decided early in the study not to remove the inactive members. This decision was based mainly on the idea that even if these people were not attending CAC meetings they were receiving all study reports and were therefore becoming informed about the study. The CAC thus reasoned that the possible good to be gained by leaving them on the CAC outweighed the advantages of asking them to resign.

From time to time during the study the CAC reconsidered its position and at the conclusion of the study reached a somewhat different conclusion. Looking back we then felt that inactive members should have been asked to make a choice of three options (a) active participation, (b) inactive but continue to receive the written reports or (c) to withdraw their names from the list.

Once an active core of members is defined they should be encouraged to identify others whom they feel would make good members. This should then allow gaining the full active membership early in the study. One problem the Binghamton CAC faced was that of having too few really active members. The voluminous reports which had to be considered after a very short period of time could have been handled better had the CAC been able to assign small committees to work on segments of the reports.

On the basis of our experience it would seem desirable to have an active membership of 20-30 persons with perhaps another 10 to 20 members who would be at least intermittantly active.

Reports

The work of the CAC consisted mainly of studying and reacting to the printed reports of the engineering consultants. Understandably the Corps had established deadlines for each phase of the study. Dates were also established for the issuance of the various reports. On the basis of such dates CAC meeting could be scheduled. Problems frequently arose however when the reports were late arriving. Rescheduling CAC meetings was very difficult because such meeting dates had to be set a reasonable length of time after the arrival of the report and had to be scheduled long enough in advance to allow CAC members to arrange their personal schedules and yet the date of arrival of the reports was not known. Frequently the CAC chairman was forced to tell CAC members that the next meeting would be held on a Tuesday night 2 weeks after the arrival of the expected report. Obviously attendance has to suffer with this type of scheduling.

One might think that the CAC could have awaited the arrival of the reports and then have scheduled a meeting allowing for a reasonable period of study. Unfortunately this was not possible since the study deadlines established by the Corps could not have been met. Thus the CAC could either do a hurried job and report its reactions at the next ISMG meeting or it could take a reasonable amount of time to study the report but miss the opportunity of reporting at the ISMG meeting. The CAC opted for the former approach.

The problem of timing leads naturally to the next matter of concern--the length or volume of the reports. Three factors contributed to a sense of frustration by the CAC--the short period available for reading the reports, the length of the reports and the small number of active members. CAC members feel that many of the reports could have been more condensed. The CAC feels that in future studies of this type that summaries could be prepared either by the Corps or by the consultants. Such a procedure should take care to summarize not only the major points in each report, but also the minor ones (perhaps a standard outline form could be used instead of a Table of Contents), since the nuances of given alternative are often not immediately apparent in a summary. In addition, at least two copies of the full report should be entrusted to the Chairman for the use of individual committee members. CAC members finding something in the summary which they questioned could then proceed to the full report. The complete reports must of course be available to all members but summaries would greatly increase the CAC's effectiveness.

Some CAC members feel that the poor timing and the length of the reports was the cause of poor attendance at some CAC meetings. Some could not attend because of the short notice. Others did not attend because they had not had time to read the reports.

The CAC understands the necessity of deadlines and the unpredictability of delays but the fact remains that the time squeeze and the volume of material seriously eroded the CAC's ability to perform its designated function.

Cooperation by Corps and Consultants

Members of the CAC felt that the cooperation by the representative of the Corps and LMS was excellent. They were always very well informed on all aspects of the study and showed no reluctance in answering the many questions posed by CAC members. Neither Corps nor consultant's representatives made any attempt to influence or direct the decisions of the CAC.

The CAC is aware of the expense involved in having these representatives in attendance at the frequent CAC meetings but we feel that this attendance is essential to the activities of the CAC. In short the CAC feels that the representative of both the Corps and the consultants did an outstanding job.

Other

Some members of the CAC were engineers or people professionally acquainted with at least some of the technical terms. Others however had little or no previous knowledge of sewage treatment processes or terminology. The CAC suggests that future CACs would benefit from a glossary of such terms as MA⁷ CD¹⁰ DO, BOD, I&I etc.

In summary the CAC feels that its involvement in the Binghamton Wastewater Management Study was a worthwhile endeavor. We feel that the Study benefited from our participation. We hope that our participation will facilitate the implementation of the Study recommendations by our fellow citizens of the area.